

AMERICAN PEONY SOCIETY

Bulletin



MARCH 1954 BULLETIN NO. 132

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George W. Peyton, Editor — Rapidan, Virginia

AMERICAN PEONY SOCIETY

OFFICERS

Vice-President: W. A. Alexander, 207
President: William F. Christman,
Northbrook, Illinois.
Eberly Avenue, Bowling Green,
Ohio.
Treasurer: L. W. Lindgren, 1787 West
Minnehaha Avenue, St. Paul, 4,
Minnesota.
Secretary and Editor: George W.
Peyton, Box No. 1, Rapidan, Vir-
ginia.

DIRECTORS

W. A. Alexander, 207 Eberly Avenue,
Bowling Green, Ohio. (1954).
William F. Christman, Northbrook,
Illinois. (1956).
Marvin C. Karrels, 3272 South 46th
St., Milwaukee 15, Wis. (1956).
L. W. Lindgren, 1787 West Minne-

haha Avenue, St. Paul, 4, Minne-
sota. (1955).

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Allen J. Wild, Sarcoxie, Missouri.
(1954).
Clare F. Wood, 130 Queen's Quay E.
Toronto, Ontario, Canada. (1956).

DISTRICT PRESIDENTS

No. 5. Dr. D. Sanford Hyde, 810 Bon-
nie Brae, River Forest, Illinois.

OBJECTIVES

The Articles of Incorporation state: Sec. 2. That the particular objects for which the corporation is to be formed are as follows: To increase the general interest in the cultivation and use of the peony; to improve the standard of excellence of the flower; to improve the methods of its cultivation and methods of placing it upon the market; to increase its use as a decorative flower; to bring about a more thorough understanding between those interested in its culture; to properly supervise the nomenclature of the different varieties and kinds of peonies; to stimulate the growing and introduction of improved seedlings and crosses of such flower; and to promote any of the general objects herein specified by holding or causing to be held examinations, and awarding or causing or procuring to be awarded, prizes therefor, or in any other manner.

MEMBERSHIP

The By-Laws state: All reputable persons, professional or amateur, who are interested in the peony, its propagation, culture, sale and development, are eligible to membership.

The annual dues are now \$5.00 a year. The year begins with January 1 and runs the calendar year. Applicants for membership should send a check or money order for five dollars payable to AMERICAN PEONY SOCIETY to the Secretary. If cash is sent, the letter should be registered. The Society will not be responsible for any cash remittances made otherwise. Membership fee is \$5.00, \$3.00 of which is for a subscription to the American Society Bulletin for one year. Subscription to the Bulletin to non-members \$5.00 for one year.

THE BULLETIN

The Bulletin is issued quarterly, usually in March, June, September and December. Back numbers will be charged for at \$1.25 a copy for the current years. Contact the Secretary for prices on other available numbers.

DEPARTMENT OF REGISTRATION

This department was formed "to properly supervise the nomenclature of the different varieties and kinds of peonies." Those who desire to register a new variety, and all new varieties should be registered to avoid duplication of names, should apply to George W. Peyton, Chairman, Nomenclature Committee. Registration fee is \$2.00 for each variety registered.



AMERICAN Peony Society Bulletin



MARCH, 1954 — No. 132

PRESIDENT'S MESSAGE

Today is March 4th and peony catalogs are commencing to show up in the mail and we are doubly reminded that Spring is on the way and soon will be with us.

Our winter, so far, has been very mild and we have had very little snow. The past two days has brought a little fall of snow which amounted to about five inches in Chicago and further South of the city. This snow was most welcome as it will provide a natural covering for the peonies that were planted last fall to prevent possible heaving, which is quite likely to happen this month and in early April.

The prospect for a good peony season is still somewhat uncertain, but we know we will have peonies in season, as we have yet to have a complete failure as long as I can remember, and that is for many years.

Cultivate your peonies thoroughly this spring as soon as conditions warrant and also give them a good fertilizer, if this was not done last fall. We urge you not to overfeed your plants, but if the earth, in which they were planted is not sufficiently fertile, enrichment would be desirable.

There will be several new varieties of peonies to greet you in the new catalogs you will receive this Spring and some of these varieties will appear on the show tables throughout the country. Look for

them and make comparisons with those already in commerce to determine their real value.

I understand the March issue of the Bulletin will be in your hands shortly and you will be able to find more detailed information about the Minneapolis show in June. The schedule, printed in the December issue, will enable you to make your preparations early and prepare your exhibits accordingly.

I am quite excited about this fiftieth exhibition of the Society. I will be with you on that occasion, health permitting. They know how to stage a fine show in Minneapolis and, in that particular territory, some of our finest peonies are grown, so we are in for a rare treat. There will be some keen competition. I can assure you, and the show will be well worth your time and trouble to attend. Tentative dates were shown in the last bulletin and if any changes are made you will be advised in ample time to make your arrangements and hotel accommodations.

Wish you all a most wonderful peony season and some real surprises, I am

Most sincerely,

W. F. Christman, President

P. S. I would be delighted to have you bring a new member with you to the exhibition in June. Won't you surprise me?

☞ 3 ☞



ARTHUR PERCY SAUNDERS, Ph.D.

1869-1953

By request several of his former articles follow:

☞ 4 ☞

THE PRESERVATION OF POLLEN FOR HYBRIDIZING

Prof. A. P. Saunders

Clinton, New York

Reprinted from *Bulletin No. 6*, May 1918

The hybridist does not as a rule make as much use as he might of the fact that pollen may be successfully kept for some time, and under favorable conditions maintains its fertilizing power to quite an amazing degree. For the benefit of those who are working on the cross-breeding of peonies or other flowers it has seemed worthwhile to gather together some of the results that have been obtained by experiment; all the more since the information has not found its way to any extent into general botanical literature. We may thus benefit by what has already been learned and perhaps be encouraged to devise still better means for carrying over the pollen beyond the blooming time of the plant from which it is taken.

Certain facts are fairly well known which show the great vitality of the pollen of a few species of plants. For instance, it is a common practice to gather pollen from tomato plants grown out of doors during the late summer and fall months, and hold it over for use on plants grown under glass in winter. Grape pollen also is said to retain its vitality for fully two months; and that of the date palm for a year or more. Carnation pollen may be kept in closely stoppered bottles for several weeks, and may thus be shipped from one part of the country to another. In preparing such pollen for preservation it is first to be thoroughly dried, and then sealed up tightly enough so that little or no moisture can get to it. For plants native to moist countries, the drying should be done in the shade, while for those native

to arid regions it may be more quickly done in direct sunlight.

It is said that in the West Indies the pollen of certain plants is commonly preserved and distributed by laying it between sheets of dry blotting paper and enclosing these in cardboard boxes.

An important paper by M. Pfundt on the general subject of the influence of humidity on the vitality of pollen, appeared in Pringsheim's *Jahrbucher der wissenschaftlichen Botanik*, Vol. 47, 1910. From this paper most of the following material is taken.

It is of historical interest that in 1712, Kampfner noted the practice of the Orientals, who cut off the male blossoms of the date palm and hang them up in a dry place, by which means the pollen is preserved until the following year. Kolreuter in 1766 records his having successfully preserved the pollen of *Chieranthuscheire* for 14 days, and Gaertner, in 1844, describes quite an elaborate set of experiments in which the pollen of various plants was studied with relation to the preservation of its vitality. In all of these experiments the test of vitality was the actual fertilization of blooms and production of seed.

This method was tedious and involved a great amount of labor where anything like an elaborate series of experiments was to be carried out. Consider a moment the method of fertilization on the plant. The pollen grain having been deposited on the stigma, where it is held by the viscid fluid, sooner or later sends out a process called the pollen tube, which penetrates down to the ovum, and through the means of which a part of the contents of the pollen grain are ultimately conveyed to the ovum, effecting fertilization. Hence it is reasonable to suppose that the ability of pollen

grains to send out a pollen tube is as good a test of their vitality as the actual fertilization and production of seed on the plant.

Now it has been found that by putting pollen grains into a sugar solution of appropriate strength, the formation of the pollen tube can be brought about on a glass slide which can be examined under the microscope. This is the method which has been used in the later researches on the subject. It is not at all difficult to observe the formation of the pollen tube in this way, the tube itself being a gut-like process extending to a surprising length in the liquid. If a solution of cane sugar in water is prepared of about 15 to 20 per cent. concentration—say one-half ounce (two level teaspoonfuls) of cane sugar in half a glass of water - the pollen of a good many species of garden plants will readily germinate in such a solution. Iris pollen tested during the preparation of these notes, showed very good pollen tube formation within three or four hours. A drop of the solution on a microscope slide answers very well if kept from evaporation; the drop may be covered with a thin cover glass, though there is danger of crushing the pollen grains unless this is very carefully done. The best arrangement, if it is available, is one of those slides with a little well in the centre; a drop of sugar solution is then placed on a cover glass with the pollen, and the cover glass inverted over the well. This forms a hanging drop which is protected from evaporation. By such observations, the vitality of pollen may be determined, but experiment has shown that pollen tube formation gets very much slower after the pollen has been preserved for some time; samples of pollen that had been kept several months took

as much as three or four days before pollen tube formation began, and it may well be doubted whether such pollen would be of much use under field conditions.

In investigating the vitality of various pollens, Pfundt took samples of them and placed them either in the air of the room or in a desiccator (a glass vessel tightly closed from the air) containing a solution which would maintain a fixed degree of humidity within the vessel.

Ordinarily the air on a dry day contains about 40 per cent. of the maximum humidity. Immediately after rain this may rise to 90 or even 100 per cent. Sixty per cent. is said to be about right for our comfort. In the experiments Pfundt carried out, he records that the humidity of the air of the room in which the samples were kept ran from 30 to 50 per cent. in winter, and from 40 to 80 per cent. in summer. Hence the samples exposed to the air of the room were under a degree of humidity which varied between wide limits with the changes of the weather. In a desiccating vessel one may adjust the humidity to any desired degree by using mixtures of sulphuric acid and water of various concentrations.

Pure concentrated sulphuric acid gives a humidity very near zero, for it is a strong absorbent of water. A mixture of 54 per cent. sulphuric acid and 46 per cent. of water gives a humidity equal to about 30 per cent. of the maximum. That would be roughly dry weather conditions. Acid and water in the proportion 37 per cent. of acid to 63 per cent. of water gives 60 per cent. humidity; moist weather conditions. Whereas 15 per cent. acid and 85 per cent. water gives 90 per cent. humidity; muggy rainy weather conditions.

The experiments show that rainy

weather conditions are very bad for the preservation of pollen, and that the best results in longevity are usually attained under dry weather conditions, and even complete dryness is very much more favorable to the life of the pollen grain than is too much moisture. The samples under observation were kept in a dark cupboard, and

the temperature of the room was ordinarily about 65 Fahrenheit.

The following table gives the longevity of various pollens in days under the different conditions as specified, the figures 90, 60, 30 per cent. referring to the percentage humidity maintained by mixtures of sulphuric acid and water, as explained above.

Order	Species	In air	90%	60%	30%	0%
Liliaceae						
	<i>Colchicum autumnale</i>	92	16	32	229	121
	<i>Hemerocallis fulva</i>	11	2	6	20	26
	<i>Tulipa Gesneriana</i>	37	23	43	108	92
	<i>Galanthus nivalis</i>	42	27	42	76	56
	<i>Iris graminea</i>	20	3	16	48	57
Ranunculaceae						
	<i>Paeonia albiflora</i>	56	14	39	157	157
	<i>Trollius europaeus</i>	29	9	29	102	124
Glumiflorae						
	<i>Zea mays</i>	1	1	1	1	1
	<i>Poa compressa</i>	1	1	1	1	1
Rosales						
	<i>Prunus avium</i>	28	12	25	102	126
	<i>Lupinus perennis</i>	129	12	43	260	164
	<i>Viola odorata</i>	35	19	28	217	235
	<i>Primula elatior</i>	56	18	56	155	179

Several facts stand out strikingly from this table. One is the great variations in the different genera. The grasses are conspicuous for their short-livedness, whereas many of the others, especially some of the early spring and late autumn blooming plants,—*Colchicum*, *Viola*, *Primula*—show an even more surprising longevity.

Wetting is very injurious to pollen, and diminishes its vitality a great deal. Pollen of *Tropaeolum majus* wetted for two minutes and then placed in artificially dried air, maintained its vitality for only two days, whereas the same pollen unwetted remained vital under similar conditions for 38 days. And the longer the wetting con-

tinues, the more disastrous the effect. The flowers—those that can do so—try their best to prevent the wetting of the pollen and stigma by furling up tightly when rain comes and at night, when dew is falling.

The longevity of many of the pollens included in the above table was certainly not to be expected, and one can hardly imagine what end in the economy of nature is met by endowing the pollen with a vitality of which it can hardly ever take advantage under natural conditions. Fertilization on the plant is generally completed within a few hours after the pollen is applied to the stigma, though there are a few exceptional cases on

record, as for example *Betula alba*, which is reported as requiring about four weeks.

Most pollens will not form pollen tubes at low temperatures—anything approaching the freezing point—but in the case of a few of the spring flowers—Crocus, Snow-drop, Christmas Rose—it was found possible to get pollen tube formation at a temperature of only about 40 degrees Fahrenheit.

Pollen is particularly susceptible to the attack of mould, which is indeed an even worse enemy than moisture. Hence in exact experiments it is necessary to use precautions in making up solutions for use. After adding required amount of cane sugar to make whatever concentration is desired, the solution should be sterilized, most easily by heating. Such a solution should be pretty free from mould spores; yet in the tests on very old samples of pollen where pollen tube formation was slow, Pfundt states that it was impossible to keep the tests going for more than three or four days without mould appearing.

Pollen tube formation may sometimes be observed in pure water. If a little of the pollen be scattered on a microscope slide, a tiny drop of water added, and the whole gently covered with a cover glass, the pollen grains will be seen to swell, and within a few hours or even in less than one hour, pollen tube formation may begin. Too much must not be expected under these conditions, for at the best only about 20 or 30 per cent. of the pollen grains show vitality even when perfectly fresh.

For ordinary purposes of testing, it is probably best to use a sugar solution as I described, though it is to be remembered that the same concentration does not

suit all pollen equally well. However, if positive results are obtained showing the sample to have retained its vitality, nothing more is needed. If the results are negative, which will be more likely with pollen that has been kept over for some time, then it may be necessary to use sterilized solutions in order to be able to give the test a longer duration.

Later investigations on the germination and fertility of pollen, for instance those of Sandsten at the University of Wisconsin, have extended the conclusions of Pfundt to a larger range of species, and have thrown new light on some other aspects of the problem. For example, it is often supposed that frost is actually fatal to the vitality of pollen. This is not the case, for it is found that pollen subjected for several hours to temperatures two or three degrees below the freezing point, while it does not act as well nor as quickly as fresh unchilled pollen, nevertheless retains a fairly high fertilizing power and germinates much as usual in the warmth. On the other hand, the life of the pistil, at least in the case of tree fruits, is imperilled by frost; indeed the majority of the pistils after exposure to the same conditions as used in the test on the pollen, were found to be dead and quite incapable of being fertilized.

It is sometimes supposed that rain washes off the viscid juice from the stigma, and so makes fertilization impossible. The fact appears to be that the female part of the flower is not seriously affected by rain; but the pollen is so; and since the period of receptivity of the stigma is not very prolonged—a few days at the utmost—if rain is persistent it may prevent the dispersion of the pollen until

the stigmas have passed the time when they could be fertilized.

Conclusions

The practical conclusions from all this for our purpose as peony hybridizers, are these:

1. Peony pollen under favorable conditions is very long lived and there should be no difficulty in carrying it through the entire season from the earliest blooming species to the falling of the last blooms of Chinese peonies, thus making it possible to cross *P. Wittmanniana* or other early species on those forms that come on later.

2. The safest conditions for preservation are where the fresh pollen is put into a desiccator provided with a mixture of sulphuric acid and water in the proportion by weight 54 of acid to 46 of water which will be by volume 30 of acid to 46 of water since concentrated sulphuric acid has a specific gravity of 1.8 where water is unity. But if the pollen is simply dried in the sun, folded in paper and kept in a dry room, it will probably retain its vitality for a couple of months, hence there should be no difficulty in hybridizers exchanging samples of pollen during the season.

3. Pollen that is to be kept must be carefully preserved from wetting; and as a corollary, it is probably hopeless to use in the field any pollen that has been wet and dried again.

4. Pollination should be carried out on days that are at least fairly warm in order to have the chances of its "taking" as good as possible.

Perhaps a few words may not be out of place here for the benefit of the beginner in cross-fertilization, who will probably have found this paper rather dry reading.

The fundamental necessities are, first, to take the bloom before it has been fertilized either by its own or by other pollen; second, to effect pollination with the desired pollen, and third, to prevent subsequent pollination.

To meet these aims we take for example a peony bloom that is just expanding, and before it is sufficiently opened to permit pollination either by wind or by bees. If it is a double, without stamens, there is no danger of self-fertilization; but if stamens are present they should be examined to determine whether or not they have already burst; if so, the flower is probably already fertilized; if not, they and all the petals should be stripped off with a pair of forceps. If the stigma is dry and not covered with viscid juice, the flower should be enclosed in a little paper bag and left until the stigma is in a receptive condition; when this time arrives an anther may be brought over from the bloom that is to be the male parent, and gently rubbed on the sticky surface of the stigma. It is very easy to see the yellow pollen adhering to the surface when this is done. The fertilized flower should then be enclosed in a little paper bag or in a bit of cloth tied over it; this may be left on for the rest of the summer, or it may be removed after a few days, when all danger of outside pollination has passed. A string tag should be attached to the stem, recording the two parents, and for precaution an entry should also be made in a note book, as the records on the plant may be washed off during the summer rains.

First peony to bloom at Rapidan, *Smouthi*, on Thursday, April 22, 1954 — Geo. W. Peyton.

HOW TO HYBRIDIZE PEONIES

Prof. A. P. Saunders,
Clinton, New York

Reprinted from Bulletin No. 8, May 1919

Let us assume first that we had the task of instructing someone who knew nothing of the structure of a flower, as to what the parts of a peony bloom are, and how it is to be hand-fertilized with pollen from another variety.

We should, I suppose, take a single variety, as being the simplest, and show him first the petals, which, though so conspicuous, take no direct part in the development of the seed, but are there only to make the flower visible and attractive to insects. So, since we are to see to the fertilization of the flower ourselves, they may just as well be removed.

The next layer of structures inside the petals are the stamens. These are the pollen producing organs, and each consists of a thread-like stem, the filament, and a yellow sac filled with pollen, the anther. When the anthers burst, thousands upon thousands of microscopic, wheat-shaped pollen grains are scattered about, and any one of these may bring about the fertilization of a seed.

At the very centre of the flower are the seed pods themselves. There are generally three of these. They are called carpels, and upon the top of each of them is a sort of ridge; this is the stigma, and it is here that fertilization occurs. When a pollen grain is placed on the stigma, it sends out a process called a pollen tube, which penetrates down through the substance of the stigma into the pod itself, and there penetrates into one of the individual seeds. Through the pollen tube the contents of the pollen grain are emptied into the

seed, fertilizing it and causing it to grow into a mature seed.

In cross-fertilization therefore, we must remove the stamens of the flower on which we intend to produce seed, and bring pollen from another variety with which to effect fertilization. The seed-bearing plant which receives the pollen, is called the female, and the one from which the pollen comes is called the male.

Our pupil will now want to know something of the technique of the process. This involves three steps, which I shall describe under separate headings:

Stripping the flower. The bloom on which pollination is to take place must first be "cleaned up." When this is done, nothing is left of it but the seed pods themselves. We first remove with the forceps all the petals, because they are of no use and get in our way; then we remove all the stamens, because if we do not, the flower will probably fertilize itself. Furthermore we must see to it that we get the stamens stripped off before any of them have burst. That means that the flower must be stripped early in its history. With double blooms containing few stamens or none, we are generally safe if we strip off the petals at about the time when the bud is unfolding enough to show the inside. With single flowers it is usually then too late; these must as a rule be stripped well before the stamens are visible. When you think the bloom might open out about the following day, tear off the petals and you will find a tight mass of stamens on the inside. Take a look at these with the magnifying glass, and see whether any have burst. If they have, you will almost surely find pollen grains adhering to the stigmas. At the

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time when the anthers begin to scatter their pollen grains, the stigmas become covered with a sticky fluid to which pollen grains tightly adhere. Hence if you find any pollen grains there, give up that flower and take one not so far along.

When you get one that shows the stigmas apparently free from pollen, and with no anthers that have split open, clean it up, being very careful to remove every stamen. Then take a critical look at the stigmas and see that they are (1) free from pollen grains, and (2) sticky. If they are not sticky you should put a bag over the flower and work on it the following day. But assuming that they are in good condition proceed to the next operation.

Getting the pollen and pollenizing. This is a simple matter if you have decided from what flower to take the pollen. Rather the best plan in my opinion is to have a glass vessel in which to place the anthers of the variety you wish to use as the male parent. What the biologists call a Petri dish, in a small size, is excellent, as it has a cover; but an ordinary little watch crystal does very well.

Pull off a few of the anthers and set them in the glass vessel, then tap it underneath so as to shake the anthers up and down. If they are in the right condition they will shake out a quantity of pollen on the surface of the glass. Now carry this back to the striped flower, pick up some of the spilled pollen on the end of a very small sable brush, and dab it on to the stigmas until their sticky surfaces are well powdered over. If you have no brush, the best plan is to pick up an anther in the forceps, and rub it on the stigma until some of the pollen comes off;

but you will find it all much easier and quicker using a brush. Our task is now accomplished, and all that remains is to protect the bloom from contact with any other pollen, and to mark it with a label.

Bagging and labelling. Very small paper bags may be had for almost nothing. One of these drawn gently down over the fertilized bloom and tied about the stem, will protect the bloom from further dangers, and may remain until the seed is ripe. So far as protection from other pollen is concerned, a few days would suffice for that; for the stigmas dry up very soon after fertilization has taken place, and when they are dry, fertilization is impossible. But if the bags are removed, there is danger in the autumn that the pods may burst and scatter the seed before it is gathered. I generally therefore tie the bag on tight and leave it until the time of ripe seed. A little peep hole may then be cut in the top and the pod can be watched every few days until it is seen to open and disclose the brown seeds within.

For labels I use the little cardboard "string tags." They usually remain legible through the summer rains if the writing is done with a good black pencil.

The process of doubling in a flower is considered to be really a transformation of the other parts into petals. First the stamens are transformed, and finally the alteration may even extend to the carpels. In such cases it is often impossible either to get pollen from a bloom or to effect fertilization on it. Sometimes, however, when transformation has been almost complete so far as the stamens are concerned, a few petals may be found towards the centre of the flower, possessing thick yellow

edges. If these thickenings are split open with a small knife blade or a pin, pollen will be found inside—not much, but enough to work with.

Different sorts show great variations as seed producers; some which apparently possess seed pods rarely if ever produce seeds. Duchesse de Nemours (Calot) is one of these. I have crossed on it several times and have never got anything. In some blooms it is almost or quite impossible to find any stigmas on which to place pollen. Richardson's Grandiflora is a flower where the process of transformation seems to have sacrificed everything to the production of petals; and so with many others. I have never been able to do anything with Therese; but Mr. Ringle of Wausau, Wis., reported some time ago having got a few seeds from it after repeated trials.

There are some varieties on the other hand that are conspicuously good seed bearers. One of these is Primevere. I think I have never found any pollen on it, but I use it every year as female parent and it sets such grand pods of seed that the stems have to be staked to keep them from being broken by the weight of the seed. I mentioned in Bulletin No. 5, a bloom of Primevere from which I had taken 61 good seeds.

Other good female parents are Venus, and Marie Crousse, neither of which ever show pollen of their own. James Kelway, M. Martin Cahuzac, Adolphe Rousseau, are also good seed producers, but they all have stamens, and should be carefully examined before being used. The Japanese blooms almost always seed well; and though it is very unusual to find any free pollen on them, some may almost always be had by opening up the

thickened edges of the central petals.

A curious case is that of the Wittmanniana hybrid, Le Printemps. It happens to be the only one of these hybrids in my garden of which I have large and robust plants. It is a single, with stamens and carpels apparently well developed. Yet in spite of repeated efforts through several years, I have never had a fertile cross either on the plant itself with other pollen or on any other sort where the pollen of Le Printemps was used. It is, I suppose, a sterile hybrid.

Generally speaking the singles yield large quantities of seed. Most of them came themselves out of double strains, and from their seed there comes a large percentage of double progeny. Hence they ought to prove pretty satisfactory as seed parents for crosses.

Last year I had a strange disappointment in connection with *P. lutea* as female parent. I had made some crosses on this species using pollen from Chinese peonies, and was rewarded with half a dozen immense pods of seed. When the pods burst, there they were,—two or three dozen big black glossy seeds. But when I got them out, I noticed that they gave a little under pressure between the fingers, and on breaking one open, I found that the seed was nothing but a tough shell; there was nothing inside. And so it proved with all of them. Now, generally speaking, when a cross fails the seed pod soon shrivels and dries up, but these had all the appearance of the most successful crosses. What sort of degree of fertilization was brought about here that would produce big seed pods, and fine looking seeds, yet all only a hollow pretense?

I have spoken of several little

implements that the hybridizer needs, and now for the sake of those who do not live in large cities, I shall tell where these things may be had.

Magnifying glass. Get what is called a doublet magnifier, giving 14 diameters magnification. They cost about \$1.25 to \$1.50, and may be had from the Kny Scheerer Co., 404 West 27th St., New York, from the Scientific Materials Co., Pittsburgh, Penna., or from any scientific supply house. In using the glass must be placed very close to the object, and the eye almost touching the glass.

Pincers. I like what are called Denton Forceps, but any small sized pincers will do. Carried in most drug stores. The Denton Forceps may be had from the Kny Scheerer Co., for about 50 cents.

Petri Dishes or Watch Crystals (Watch Glasses) may be had from either of the above firms. Petri Dishes, 2 inch, about 20 cents each; watch glasses cheaper.

Small Sable Brush, at any art store or large stationer's.

Tags for Labelling. I use Denison Marking Tags 36-B. They are of a good comfortable size.

NEW STRAIN OF HYBRID PEONIES

Prof. A. P. Saunders
Clinton, New York

Reprinted from Bulletin No. 34 June 1928

It is now eleven years since I began to work on the production of hybrids between the ordinary Chinese peonies and the varieties of *P. officinalis*. The first blooms were produced in 1924 and since then each year has brought a new group to maturity. This strain is now sufficiently well established so that it may be of interest to discuss some of its characters.

The seedlings which have so far

come into bloom with me are these:

Four hybrids using pollen of a single *officinalis* variety on the single white Chinese peony *The Bride*. These are all single crimsons.

Thirty-one hybrids using pollen of a single *officinalis* variety on double white or yellowish Chinese peonies (*Primevere*, *Fuji Mine*, a *White Jap.*, and a third plant, a seedling of the type of *Primevere*). These are also without exception single crimsons.

Seven hybrids using *sinensis* pollen (probably mixed pollen from double and single sorts), on *Officinalis rubra plena*. All these seven are full doubles, six of them double crimsons and the seventh a double pink.

One hybrid using pollen of *sinensis* on a single *officinalis*. This proved to be a very small almost black flowered single.

Officinalis Parent Controls

Doubleness

It is a curious fact that the character of doubleness or singleness is apparently determined by the *officinalis* parent in every case. Also, that except for the one case of a double pink in the third group, the *officinalis* parent determines the color.

With respect to the general habit of the plants, the female parent seems to have most to say. All of the 35 hybrids in the first and second groups are tall plants, quite as tall as the average Chinese peony and much taller than their *officinalis* parent. Two of them, of which I happen to have measurements, showed a height of 33 and 40 inches respectively, while the two *officinalis* varieties *rosea plena* and *striata elegans* measured on the same day, had only 26-inch stems, and the effective difference is much larger than these figures indicate, since the *officinalis* varieties have a

sprawling habit, and the actual stature of the plants was not by any means equal to the length of the stem, whereas the hybrids, having thick, stiff, straight stems have an effective height as great as the actual stem length.

Blooming Time Same As *Officinalis*

In the third group the plants are variable in stature, some being quite dwarf, others very tall.

The foliage is in general intermediate, but inclines rather to the *officinalis* than to the *sinensis* parentage; it is usually coarser than that of the *officinalis* varieties.

In blooming time these plants come with *officinalis*, but they have a longer duration and the height of their season laps over into the beginning of the *sinensis* season. Some, indeed, go on longer, for in 1927 I cut a bloom of one of the double hybrids on July 12. The year 1927 was, it is true, a very late year; but the Chinese peonies were in full bloom here before July 1, and very few of them were still hanging on as late as the 12th. This hybrid strain in that year had a total season of more than a month, for the first recorded bloom was on June 10.

The real question, however, for the peony fancier is as to the actual beauty and value of these hybrids. My opinion is that for the garden they will certainly prove an important addition. As cut flowers for the house, the singles have great beauty, but whether they would have any commercial value in that way I am not so sure; it may well be that some of the double form would better meet the exacting demands of the cut flower trade.

Singles Are The Most Striking

The striking individuals so far in this race are the singles on account of their stature, size, and color. At their best they are im-

mense, upstanding, cup--shaped blooms of the most intense glowing and vivid crimson color with a very effective group of stamens sometimes striped with red. A measurement gave eight inches for the diameter of one of the larger blooms, and for the largest of all nine and one-half inches; but many are smaller. The best of them, and especially those which lean towards the dark mahogany shades, hold their color extremely well until the petals fall, but some unfortunately show a tendency to go off towards the end into inferior purplish tints.

The entire strain is sterile both as to its pollen and also as to its ability to set seed, although most of the singles form immense furry seedpods capacious enough to hold a heavy crop of seeds if there were such. This sterility no doubt adds to the length of life of the individual blooms and it is true that they last extremely well.

It is strange that this cross was not made long ago, for it is not one that offers any particular difficulty, although the yield of seeds is always small. I have been told that hybrids of this strain have been produced in Holland but I cannot vouch for the truth of this.

In this country there have been several growers who have worked on it besides my self during recent years and the beginnings must have been made at almost the same date by all, and quite independently. The first to stage any blooms at an exhibition was Lyman D. Glasscock of Joliet, Ill., who showed a bloom of such a hybrid at the peony show in Des Moines in 1924. Since then they have appeared at several of the Peony Society's exhibitions.

Late heavy frosts and possibly long continued drought has resulted in many blind plants in Virginia.

PREPARATION & STORAGE OF SHOW PEONIES

By Harry F. Little

Reprinted from Bulletin No. 23, Feb. 1925

So much has been written about the preparation and holding of peonies in cold storage for show purposes that possibly many otherwise experienced gardeners have been led to believe that the showing of peony blooms in competition is a deep and mysterious art only to be acquired by wide experience, and only to be attempted by the most skilled horticulturists.

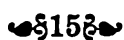
As a matter of fact, the successful showing of peonies is very simple, and may be undertaken by any amateur gardener, of even limited experience, without fear of disastrous results. Probably no other flower can be as easily grown, as successfully held in cold storage, or as easily transported as the peony. No special laborious preparation or treatment of the plants is required to grow fine show flowers, and no extensive experience is required to handle the blooms in storage. Neither is any special skill required to develop the flowers into form for the show table after they are taken from the cold storage room.

Experience has shown that peonies can be successfully held in storage for days, or even weeks, and then developed for exhibition purposes as successfully as though freshly cut from the plants. In fact, peony blooms, cut in the bud and opened indoors away from the sun, show far more delicate and beautiful colorings than the flowers which open on the plants; and many of the finest varieties only show their real quality when handled in this way. Some growers, of wide experience in handling show flowers, go so far as to contend that peonies, placed in cold storage and then developed

for the show table, will hold up longer and better than freshly cut blooms. While the question may yet be held as debatable, it has been clearly demonstrated that it is possible to place the different varieties of peonies in storage as they come into bloom throughout the season, beginning with the earliest *Officinalis* varieties, and ending with the very latest varieties, such as *Lovelessness* and *Galathee*, and then develop them for show all at the same time a week or more after the close of the blooming season. Some varieties hold up in storage better than others, and can be held with proper care for a much longer time. In the cut flower trade, certain good storage kinds are kept for eight or ten weeks.

The first thing to be remembered in the staging of fine show flowers is that only well-established plants of any variety will produce the best blooms. It is not possible to say how old a peony plant must be to be at its best, for that depends on the variety itself, the size and vigor of the root from which it is grown, and the soil conditions and cultivation with which it is favored. Certain varieties, under most favorable conditions, are slow to establish, and do not reach their best short of four, or sometimes five years, while other kinds, happily situated, will put forth as fine blooms on two-year plants as they will ever produce. It is safe to say, however, that flowers must be cut from at least three-year-old plants, if a typical exhibit is to be staged covering any great number of varieties. Even then, the exhibitor must have very well grown plants, if he can successfully show fifty or one hundred varieties in competition with the man who can select his blooms from five- or six-year-old plants.

At the National Peony Shows,



where one expects to find all the new and rare peonies shown in perfect form, it is not an uncommon thing to hear the remark, "Why, I have grown finer flowers than these myself." No doubt but that is true with all of us. It is not very difficult, even with but a few plants, to grow one, or even a number of varieties, to perfection. But it is quite a different thing to stage an exhibit of one hundred, or even fifty varieties, and have all of them near perfection. It requires an extensive planting, indeed, to be able to show such a number of varieties, all from well established plants. The desire to show the new and rare things, of which there are but a few old and established plants in existence, often leads to the cutting of blooms from young plants, and so cuts down the average quality of the exhibits.

Having good, healthy, well-established peony plants to begin with, cultivation and moisture are the principle requisites in growing fine show flowers. As soon as the new growth is above ground in the spring, and the soil in workable condition, the earth about the plants should be forked over several inches deep for at least two feet from the crown. Throughout the growing season, this soil should be frequently stirred to maintain a perfect earth mulch to draw and hold moisture to the plant. If the season is dry, water should be supplied in sufficient quantity to thoroughly soak the ground to a depth of at least eighteen inches each ten days until the blooms begin to open. Water is best supplied by letting it run slowly from the open end of a hose into a small trench dug about the plant. Before the top soil has time to dry out, the trench should be filled in, and the earth mulch again stirred to retain the moisture.

With good, ordinary garden soil, no special fertilization is necessary, although a light top dressing of bone meal or wood ashes early in the spring in sufficient quantity to maintain the normal state of fertility in the soil may be beneficial. Thoroughly rotted stable manure may be used to advantage, if properly handled. This is best applied as a top dressing in the fall, and forked over at the first working of the soil in the spring. Fresh stable manure should never be used on peonies under any condition, as the free ammonia therefrom is absolutely harmful to the plants.

Much has been said about force feeding and special fertilization to obtain extra fine blossoms, but it is doubtful if any such treatment of plants is beneficial or desirable. Peony plants clearly resent over-fertilization, and far more plants have been injured by forcing than have ever been helped. By the use of liquid manures, commercial fertilizers, nitrate of soda, and other things, strong plant growth can be stimulated, and undoubtedly abnormal flowers produced; but experience has shown that such treatment of a plant one year almost invariably results in a sick plant the following season. It often requires several years for the plant to recover, if indeed it ever comes back, from the seeming *indigestion* caused by the over-feeding. As well-established peony plants represent no small investment in time and money it is hardly worth the risk of sacrifice for the results to be obtained. Then, the abnormal blooms, which are developed by the feeding beyond their typical form and size, are not the most desirable show blooms. The fine texture of the petals, and the delicate color tints in the flowers are sacrificed to a great extent for size alone. Such blooms are not typ-

ical flowers, and to the true judge of peonies, they are not the finest. Good, normal blooms, typical in form, size, and coloring of the variety, are the ideal show peonies; and these are only obtained from healthy, well-established plants grown in a normal soil under normal conditions.

As soon as the growth is sufficiently advanced, all laterals, or side buds, should be pinched off close to the stems, and any weak or defective terminal buds removed. Some growers advocate pinching off all but three or four of the strongest terminal buds on each plant, and even cutting out some of the stems close to the ground to force the growth of the remaining plant. As nature takes care of the relationship, or balance, between the root system and the top growth of the plant, is it not reasonable to suppose that, to a strong and thrifty plant, the natural foliage produced is as necessary to the welfare of the plant system as is the root growth, and that by cutting away stems we are throwing this natural relationship out of balance rather than strengthening the growth?

A few days before the early varieties are ready to bloom, the plants should be carefully gone over, and the strongest and most promising buds of the varieties wanted for show selected. A small paper bag—the grocer's common half-pound size is best—should be slipped over each bud, and secured in place by a small rubber band, twisted about the mouth of the bag below the bud, just tight enough to prevent the bag from being blown away by the wind. After the rubber band is in place, care should be taken to pull the bag well up against the under side of the bud, otherwise the subsequent growth of the

stem, especially of the later varieties, will force the bud up against the bottom of the bag and result in a warped or crooked stem. The purpose of sacking the buds is two-fold. First, the bags protect the maturing buds from damage from rain or sun; and second, they furnish an ideal wrapping for the flowers later on when, in a partly developed state, they must be packed for shipping.

After all the bags are in place, a wired wooden tree label, with the name of the variety plainly written thereon, should be attached to the stem under each bud well above the foliage. By thus permanently labeling each bud before it is cut from the plant, much labor and confusion later on, when time becomes valuable, will be saved. The wooden tree labels are the most satisfactory labels to use because they are substantial enough to withstand possible damage in shipping, and are not affected by water.

As the first flowers begin to open, close attention must be given to the sacked buds, for the whole secret of the successful storage of the blooms is in cutting the blooms at just the right stage. Both the length of time the blooms are to be held, and the type of flower or the variety, must be taken into consideration. Assuming that flowers are wanted for showing, say two or three days after the close of the blooming season it would be necessary to hold the earlier varieties in the cold storage about three weeks, and the mid-season kinds for a week or ten days. By watching the exposed buds on the plants, and by feeling the buds under the bags, one will quickly learn the *feel* of the buds ready to cut. Early varieties, such as *Umbellata Rosea*, *Grandiflora Nivea Plena*, and *Edulis Su perba*, should be cut just as the

buds show marked color and begin to feel the first indication of softening. Mid-season varieties, such as Frances Willard and Lady Alexandra Duff, and in fact most of the varieties except the very latest should be cut at the stage just when the petals in the buds begin to grow and loosen and before the first petals begin to unfold. Late varieties, such as Marie Lemoine, Milton Hill, and Enchanteresse, must be left on the plants until almost at the half-open stage. Single Japanese, and semi-double varieties of scant petalage should be cut in tighter bud than the full rose types, such as Therese or Jubilee. Very compact, full petaled varieties, as L'Indispensable and Marie Lemoine, must be allowed to develop proportionately longer on the plants.

As the buds reach the proper stage, they should be cut with stems fifteen or eighteen inches long, and all foliage stripped off. Longer stems on show flowers, unless they are to be shown in large bunches or in bouquets, are superfluous; and the extra foliage can well be left on the plants. All buds of a variety, even on the same plant, do not develop evenly so it may be necessary to make cuttings of the same variety at two or three different times. As fast as cut the buds should be placed in jars of water in a cool basement where the varieties can be sorted and tied together for convenience in handling. Each evening the day's cutting should be taken to the cold storage room, and placed, with stems well submerged, in jars of water to remain undisturbed until time for shipment.

Probably the best storage temperature is an average of forty degrees, although lower temperature has seemed to give equally good results. At forty degrees, most varieties, and especially those cut in

tight bud, will remain almost dormant, while other kinds will slowly develop until the immense blooms fill the half-pound bags almost to the bursting point.

If the flowers in storage are to be packed for shipment, the trunks or whatever containers are to be used, should be taken into the storage room, if possible, and heavily lined with paper. After the blooms have been removed from water long enough to allow their stems to dry off, they should be packed in layers tight enough to prevent any shaking about in transit. If thus packed cold in the storage room, and properly insulated with the paper linings, the containers will withstand a journey of 24 to 36 hours, even in hot weather, without becoming heated through to injure the flowers.

At least twenty-four hours will be required for the storage blooms to develop to their best after being opened up, so plans should be made to have exhibits set up well before the judging of the flowers begins. On reaching the show room sufficient jars or bottles of water should be set up to receive all the blooms. As the shipping containers are opened, the ends of all stems should be clipped, and the flowers placed in water as fast as possible. Then, and not until then, the paper bags should be removed, and the flowers given ample room and opportunity to open.

Thrills, indeed, await the exhibitor who has yet his first time to watch, with anxious anticipation, the development of his first show blooms. The already half-opened blooms unfold so fast that one can actually see the immense flowers grow in size and beauty; while those, in seemingly tight bud when unsacked, will open within twenty-four hours time into fully developed

flowers, often larger and more beautiful than the finest blooms opened naturally on the plants.

Where a cold storage plant is not accessible, peonies can be successfully held for a week or longer in the family ice box, or in a cool, dark cellar, if the buds are prepared and handled in the same manner as has been described for the storage room.

When it is necessary to ship buds to a storage plant at a distance, they should be prepared in exactly the same manner. After cutting, they should be given a few hours to fill with water in a basement, and then packed dry in well ventilated containers, such as orange or lemon boxes, for shipment by express. At the storage room, the stems should be clipped, and the blooms placed in jars of water as before described.

NEW MEMBERS

Dr. N. W. Ackerman, 7321 North Cape Road, Hales Corners, Wisc.

Buffalo Public Library, Department of Bibliography, 7 Broadway, Buffalo 3, N. Y.

Keith and Peggy Goldsmith, Rt. 2, Box 2148-E, Edmonds, Wash.

A. A. Horton, 614 Highland Ave. Topeka, Kans.

John Hustler, 79 Rose St., Metuchin, N. J.

Frank M. Jacquette, Rt. 1, Grand Junction, Colo.

Mrs. Glen E. Ropp, 306 W. Brown St., Glasgow, Ky.

Clarence A. Sutter, 603 Homestead St., Peoria 3, Ill.

Mrs. D. L. Vaughan, Dogwood Farm, Rt. 1, Kennesaw, Ga.

Mrs. William B. Weaver, jr., Quaker Ridge, Greenwich, Conn.

Herman Winters, 6400 Whitmore Lake Road, Whitmore Lake, Mich.

Herman Wolf, 2 Circle Ave., Larchmont, N. Y.

HYBRID TREE PEONIES

For many centuries after the culture of the tree peony began in China, the only varieties known were those belonging to the species *suffructicosa*, (*arborea*), which belongs to the section of the genus *Paeonia* known as *Moutan*. This section, according to Stern's monograph, embraces all known species of the tree peonies. Many, however, limit the use of the word *Moutan* to the species *suffructicosa*. We shall use it here in its wider sense. The word means "male scarlet flower," probably used because the red variety was considered the most beautiful. The "male" refers to its method of propagation by root division.

The species *suffructicosa* is native to the northern part of Western China and is found in both white and red or purple forms. Under cultivation, varieties have been produced in a wide color range from pure white through all intermediate shades of pink and red to black red and purple. A few approach wisteria. There is also said to be a green variety in the Peony Temple in Peiping. See Bulletin for December, 1949, No. 115, for an interesting account of this peony.

The cultivation of the tree peony began in China, probably more than fifteen hundred years ago. From China it was imported into Japan somewhere between 500 and 750 A. D. It is from this country that we get the finest varieties today. It was also carried into Korea where it is said they make the finest flowers found anywhere.

It was brought to England from China about 1784. The variety was one still well known and found in many old gardens in America. It was called *Banksi* after its importer, and is still the most vigorous grower and the surest bloomer of all double tree peonies. Its color is

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a rather poor shade of pink, but it does make a good showing as a plant. Other varieties were later on imported into England, France and Holland and from these have come those we know as "European" and are mostly doubles, which are often hard to flower. These flower early, two or more weeks before the regular herbaceous peonies and about the same time as the earlier hybrid herbaceous.

It is strange that nothing seems to have been known of the yellow tree peony until about 1883 when it was discovered in the Southern part of China and in Tibet. The first discovered was *lutea*, a small fragrant flower varying in color from light yellow to deep yellow or apricot. It blooms about a week or more later than the *suffruticosa* varieties and occasionally will make a bloom or two in the fall or late summer. Its discovery was followed soon by the finding of another closely related species, *Delavayi*, in the same general neighborhood and in the last few years by a much larger form of *lutea*, known as *lutea Ludlowi*. *Delavayi* varies in color from a light red with some yellow in it to a dark red.

The introduction of these into Europe marks the beginning of the remarkable lot of hybrids we now have. *Lutea* was carried to France almost immediately after its discovery. M. Louis Henry began to hybridize it with *suffruticosa* and introduced in 1897, according to Mr. Wister's list in Bulletin No. 95, the now well known and widely grown double yellow hybrid, *Souvenir de Maxime Cornu*. As was to be expected, he was closely followed in this work by the firm of Lemoine and Son who introduced their first variety the beautiful single yellow, *L'Esperance*, in 1909. Since then, about a dozen other varieties have

come from these two men.

By far the most important work with these hybrids has been done by Prof. A. P. Saunders and his originations now number about 80. Their color range is truly remarkable. There are all shades of yellow from palest creamy yellow to deep orange, with yellow mixed with maroon through scarlet to crimson and with pink and yellow blends, thus adding many different hues to the already wide color range of the *suffruticosa* varieties.

It is to these hybrids that we look for the greatest advances in tree peonies in the years to come. The work has only just begun. While we know that a serious blow was struck to this work when Prof. Saunders died, yet we hope there will be found many to carry on where he left off and the prospect seems good if we can judge by the number of letters that come to this office in regard to this work.

These hybrids are generally much larger than *lutea* and they bloom from a week earlier to the same time as the regular *lactiflora* herbaceous peonies. As *lutea* is native to a warmer climate than most of the other peonies, it may not be as hardy as others in the far North. In fact all tree peonies need some protection in the states along the Canadian borders and in Canada west of Detroit.

Often these *lutea* hybrids are killed to the ground in winter. Then they will put up vigorous growth from the roots and I am told that some growers treat them as herbaceous and cut them down each year. But we have no really authentic information about this treatment. The double forms have the bad habit of hanging their heads and burying their flowers under the foliage. But improvement in this regard is being made in the later varieties.

It may be possible that these hybrids will flower farther South than most peonies as they are native to a warm climate. However, repeated requests for information on this have as yet gotten no replies. Maybe no one has seriously tried them out in say Southern Alabama, Georgia, Louisiana, Texas, Florida, and Mississippi. Also in California. If anyone does grow them in these warmer parts of the country, please write and tell us about it.

It is advised that those who contemplate planting these peonies, buy plants that have been grown from grafts at least two or three years. One year grafts need more attention than most people give and also the mortality in the old, large, field grown clumps may be high. The prices compare favorably with those of any new peony. Some sell as high as fifty dollars and some as low as five or six. Also it is recommended that you buy those that have been grafted on herbaceous roots. While those grafted on tree peony roots make larger plants sooner, yet, unless one is exceedingly careful and keeps all sprouts from the roots cut out, the graft will be killed out in a few years. As the roots used for grafting are almost always those of the wild purple form, you will soon have a garden full of these and no others. Sprouts are rarely formed from herbaceous roots and if they are they are easily recognized and can be eliminated while sprouts from the wild tree peony are hard to distinguish.

The point where the graft is made should be planted well below the surface to encourage root growth from the scion, as this is necessary, the herbaceous root usually rotting after a year or two.

The culture of these peonies is

the same as for any other peony. But they should be given good attention. All old dead wood should be cut out each year. Old stems sometimes die to the ground and the tops of others die back to some extent. So eliminate the dead wood. If scales attack them, spray with regular dormant spray used for scale in fruit trees.

Tree peonies begin to grow earlier than others. For that reason, the buds are liable to frost damage from late frosts. The old doubles seem especially susceptible. The singles and semi-doubles are not hurt as often. The hybrids escape generally, as they do not begin to grow as early as the *suffruticosa* varieties. In fact they usually get by if the regular herbaceous do.

We urge all who can possibly do so, to plant some tree peonies. They are the most beautiful of all flowering shrubs and have the widest color range.

A resume of the methods of propagating tree peonies is being prepared by Miss Silvia Saunders and will be printed in the Bulletin as soon as received. Also it is planned to bring the list of all tree peonies up to date soon. The list of hybrid tree peonies following is up to date as far as we could make it.

ORIGINATIONS OF
A. P. SAUNDERS,
CLINTON, N. Y.

Hybrids of suffruticosa, lutea and Delavayi.

Age of Gold, D., intense yellow. 1948.

Alhambra, D., reddish gold. 1948.
Amber Moon, S., deep yellow edged crimson. 1948.

Angelet, S., yellow edged rose, mauve center. 1952.

Apricot, S., rose and yellow. 1948.
Arcadia, S., palest yellow. 1942.

Argosy, S., sulphur yellow. 1928.
9.07.

Banquet, SD., cherry red. 1941.
 Black Douglas, SD., nearly black. 1948.
 Black Panther, SD., almost black. 1948.
 Black Pirate, S., mahogany red. 1935. 9.2.
 Brocade, S., red - gold. 1941.
 Canary, S., bright yellow. 1939. 8.5.
 Celestial, SD., pale yellow, black flares. 1948.
 Centaur, S., red with black base 1941. Withdrawn.
 Charioteer, S., dark crimson. 1949.
 Chinese Dragon, SD., bright red, dark flares. 1948.
 Conquest, SD., strawberry red. 1948.
 Copper Rose, SD., strawberry red edged cream. 1952. Withdrawn.
 Coronal, S., deep ivory edged rose. 1948.
 Corsair, S., darkest of all, almost black. 1941.
 Countess, S., dusky yellow flared rose. 1942.
 Daffodil, SD., small daffodil yellow. 1948.
 Damask, S., buff, deep red stains. 1941.
 Daredevil, S., bright garnet red. 1948.
 Festival, SD., creamy yellow, edged rose, yellow and cream. 1941.
 Gold Dust, D., yellow and cream. 1952.
 Golden Bowl, S., brilliant yellow. 1948.
 Golden Hind, D., creamy yellow, flushed darker. 1948.
 Golden Isles, D., brilliant yellow, black flares. 1948.
 Golden Mandarin, old gold streaked dark maroon. 1952.
 Goldfinch, SD., yellow. 1948.
 Gold Sovereign, D., bright golden. 1949.
 Happy Days, S., small golden rose edged red. 1948.
 Harlequin, SD., mauve to cream. 1952.
 Harvest, SD., bronze gold. 1943.
 Heart of Darkness, S., second generation, black. 1948.
 Hesperus, SD., pale yellow and rose. 1948.
 High Noon, SD., lemon yellow. 1952.
 Holiday, D., cream and rose. 1948.
 Hyperion, SD., light yellow. 1948.
 Infanta, S., ivory white, dark flares. 1948.
 Lombard, S., deep plum. 1948.
 Marchioness, S., yellow and strawberry pink. 1940.
 Melody, S., mauve over ivory, plum flares. 1948.
 Monitor, SD., dark red. 1948.
 Mystery, S., Shades of lavender and green. 1948.
 Nankeen, S., pale yellow, black center. 1952.
 Narcissus, S., pale yellow. 1941.
 Nereid, SD., pale yellow. 1948.
 Orion, SD., Roman gold. 1948.
 Pastoral, S., clear rose on pale yellow. 1952.
 Phoenix, S., Catawba color. 1941.
 Princess, SD., mauve and gold. 1941.
 Red Cloud, S., dusky mahogany red. 1952.
 Red Currant, SD., shining crimson, 1948.
 Red Jade, S., dark red. 1948.
 Regent, D., yellow and red. 1945.
 Renown, D., light copper-red. 1949.
 Right Royal, D., rosy red. 1952.
 Roman Gold, S., brilliant yellow. 1940. 9.5.
 Rose Flame, D., deep rose. 1952.
 Savage Splendor, S., ivory, purple and maroon. 1952.
 Segovia, S., tawny yellow. 1949.
 Silver Plane, S., cream, plum flares. 1948.
 Silver Sails, SD., silvery yellow. 1940.

Spanish Gold, D., brilliant yellow. 1948.

Spring Carnival, SD, yellow stained dark red. 1944.

Stardust, S., small yellow. 1948.

Summer Night, SD., dusky dark rose. 1949.

Sunrising, D., yellow, almost orange. 1948.

Tea Rose, SD., light amber. 1948.

Thunderbolt, S., black crimson streaked scarlet. 1948.

Tiger Tiger, SD., orange red. 1948.

Titania, SD., pale yellow, flushed rose. 1949.

Trophy, D., strawberry red. 1942.

Vesuvian, D., dark red. 1948.

Wings of the Morning, S., pale yellow, purple flares. 1948.

ORIGINATIONS OF OTHERS

V. Lemoine and Son, Nancy France.

Alice Harding, D., purest yellow. 1935. 9.33.

Aurore, S., terra cotta with copper sheen. 1936. 8.75.

Chromatella, D., pure sulphur yellow. 1928. 9.38.

Eldorado, SD., clear yellow. Since 1944.

Flambeau, D., clear salmon red, purple veins. 1930. 9.25.

La Lorraine, D., sulphur yellow, carmine base. 1913. 8.96.

L'Esperance, S., clear primrose yellow, carmine base. 1909. 9.63.

Mine d'Or, S., light yellow. Since 1944.

Satin Rouge, D., blood red fading to old red. 1926. 9.38.

Sang Lorraine, S to SD., deep mahogany red, black at base. 1939.

Surprise, D., yellow shaded salmon and purple. 1920. 8.4.

Louis Henry, France.

Madame Louis Henry, SD., carmine, buff, pink purple base. 1919. 8.9.

Souvenir de Maxime Cornu, D., Pale yellow shot red. 1897. 9.21.

HYBRIDIZING PEONIES

As the blooming season is now upon us, many of our readers will doubtless try their hand at hybridizing.

The Handbook of the Peony gives concise rules for doing this. It is still available for 25c.

In order that more detailed instructions may be available, many have lately suggested that some of the articles written by Prof. A. P. Saunders and published in Bulletins that are now out of print, be published again. Three of them appear in this issue. Those, who follow the the instructions given in them, should get excellent results.

As Prof. Saunders was quite particular as to his methods and used techniques that some think too tedious, a list of additional articles on the subject is given below. Special attention is called to those by Mr. Edward Auten, jr., who has gotten excellent results from somewhat simpler methods.

The attention of our amateur hybridizers is called to Bulletin No. 129, June, 1953, in which will be found in detail the hybrids now in commerce and the crosses that produced them. This list should prove of use in selecting the species you desire to use in your work.

ARTICLES ON HYBRIDIZING

The title, Bulletin No. and date are given in order.

By Edward Auten, Jr.—

Random Notes on Peony Breeding. 36, 12/28.

Hybrid Peonies. 51, 9/32.

Officinalis Hybrids. 56, 3/39.

Marie Crousse and its Seedlings. 106, 9/47.

Raising Peonies from Seed. 114, 9/49.

By Lyman D. Glasscock—

Some Tips on Raising Peony Hybrids. 38, 6/29.

Hybridizing Peony Species. 39, 9/29.

Officinalis Hybrids. 56, 3/31.

Hybrid Peonies. 61, 9/35.

By Col. Benjamin W. Guppy—

Good Cheer for Beginners. 61, 9/35.

Growing Seedling Peonies, 62, 63, 66, 1/36, 3/36, 12/36.

Officinalis Rubra x Albiflora. 103, 9/46.

Other Authors—

What! No Yellow Peonies? Dr. H. B. Beeson. 55, 12/33.

My Experiments with Seedlings. Walter Mains. 55, 56, 12/33, 12/34.

Peony Seedlings. Col. J. C. Nicholls, 59, 9/34.

Fertilizing Peonies. Col. J. C. Nicholls. 71, 3/38.

Hybridizing as a Hobby. W. S. Bockstoce. 67, 3/37.

Fun with Seedlings. E. F. Kelsey, 70, 12/37.

Notes on Peony Species. 75, 3/39.

Interesting Experiment in Planned Peony Crossing. Reno Rosenfield. 77, 12/39.

Color in the Peony. Howard Wiggell. 81, 6/41.

Law of Hybridization. Richard Diener. 93, 3/44.

Comments on Genetics. C. M. Clarke. 97, 3/45.

Species Hybrids are Fun. Dr. Earle B. White. 101, 3/46.

Beautiful Peony Species. Col. F. C. Stern. 114, 9/49.

Pollinating Peonies, Mrs. Alice Nightingale. 121, 6/51.

ROBERT W. JONES

Early in the morning of January 28, 1954, our good friend, Robert W. Jones of 731 Delaware Ave., St. Paul, Minn., quietly crossed over the river in his sleep. Several years ago he had been partially paralyzed, but had recovered sufficiently to go around to some extent, but had not been able to engage in active work.

For many long years, he had been an active and loyal member of this Society and of the Minnesota Peony and Iris Society of which he once served as President. His extensive exhibits were never lacking in the Annual Shows and he was often the top winner.

His garden, known as the Hi-Way Gardens, was located on Jefferson Highway in West St. Paul, where he lived with his wife, during the summer months in a beautiful modern cabin, surrounded by one of the finest collections of peonies in the country, which was kept strictly up to date until he was forced to retire.

In his younger days, Mr. Jones was a telegraph operator on the Chicago, St. Paul, Minneapolis and Omaha Railway, a subsidiary of the Northwestern System. He had retired many years ago.

He is survived by his wife, Mrs. Irene Jones, three married daughters (Margaret of St. Paul, Shirley of Arkansas and Gwendolyn of Wyoming), and one son, Robert W. Jones, jr., of North St. Paul. He has also a number of grandchildren.

He was a quiet unassuming man and greatly beloved by a wide circle of friends. For the past twelve years it has been the privilege of the writer to spend many happy hours in his hospitable home. His warm friendship will be sorely missed.

George W. Peyton, Rapidan, Va.

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50th ANNUAL NATIONAL SHOW

Date: June 21-22, 1954

Place: Minneapolis, Minn., Lobby
Northwestern National Bank.

Headquarters: Radisson Hotel.

Hotels: All within several blocks
of the Northwestern National
Bank; Radisson, Dyckman, Nic-
ollet, Curtis.

Shipping Peonies for Display

A. Prepay all charges. We sug-
gest shipment via Air Express or
Railway Express.

If your peonies are not to be put
in cold storage, ship direct to
National Peony Show
% Northwestern Natl. Bank
Minneapolis, Minn.

To arrive June 19 or 20.

B. If your blooms are to be put
in cold storage and held for the
show, ship prepaid any time after
June 5th. They will be stored free
of charge and delivered to the
show floor Sunday p.m., June 20th.
Include full instructions as to
classes, Peony names, etc.

Direct these shipments as fol-
lows:

Natl. Peony Show (for storage)
% R. L. Gould & Co.
500 Jackson Street,
St. Paul, Minn.

(Please note this is St. Paul and
not Minneapolis.)

C. If you are a local grower, you
may store your peonies after June
5th at Bailey Nurseries, NOT the
R. L. Gould Company.

You must transport your own
Peonies from the storage space to
the show. Transportation will not
be provided for local growers.

Staging Blooms

Northwestern Bank exhibition
floor will be open Sunday after-
noon and all Sunday night. Ex-
hibition containers will be fur-
nished.

If you are an out of town grower
and can not be here to stage your
blooms, furnish us with full in-
formation and a committee will
stage the blooms for you.

Schedules

A complete schedule of the 1954
show was published in the pre-
vious bulletin. A complete program
and schedule will be mailed direct
to you about May 1st.

Information

Information

If you require further informa-
tion, you may write either of the
following people:

Mr. L. W. Lindgren
1787 W. Minnehaha Ave.
St. Paul 4, Minnesota

OR

Mr. T. E. Carpenter
58-60 East 5th Street,
St. Paul 1, Minnesota

An Invitation

As President of the Minnesota
Peony and Iris Society, I invite
all members of the National Peony
Society together with their friends
to attend this Fiftieth Annivers-
ary Show.

We have some very fine growers
in this vicinity, and most of the
new introductions will be shown at
this year's show.

This is a special opportunity for
Southern growers to participate in
a late National Show because of
the storage facilities we are offer-
ing.

The Minnesota Peony and Iris
Society is looking forward to being
your host.

T. E. Carpenter, President

Minn. Peony & Iris Society

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PEONY SHOWS

THE TWELFTH ANNUAL
PEONY SHOW
of the
PEONY FLOWER CLUB UNIT
of the
OKLAHOMA CITY GARDEN
CLUB
will be held
MAY 8-9, 1954

Mrs. G. A. Bawden, 3425 N. W.
20th Street, Oklahoma City 7, Okla.
is Publicity Chairman. Those re-
questing additional information
are referred to her.

It is hoped that as many of our
members in that area will plan to
attend as possible.

* * * *

The JUNE GARDEN SHOW of
the Horticultural Society of New
York will be held on Wednesday,
June 9, 1954, from 1 to 4:30 p.m.
in the Colonnades Ball Room of the
Essex House, 157 West 58th St.,
New York 19, New York. Admis-
sion \$1.00. This show will feature
Peonies and Roses. For further in-
formation address the Secretary
at the above address.

* * * *

The PEONY, ROSE and IRIS
Show of the Massachusetts Horti-
cultural Society will be on Mon-
day and Tuesday, June 14-15, 1954,
Horticultural Hall, 300 Massachu-
setts Ave., Boston 15, Mass. Fur-
ther information may be obtained
from the Secretary at this address.

* * * *

The ANNUAL SHOW OF THE
FIFTH DISTRICT will be some-
where in the Chicago area about
June 15. No definite information
has been received as we go to
press. Mr. Francis P. Tikalsky, 312
North Spring Avenue, La Grange

Park, Ill. will give you better in-
formation on application.

* * * *

THE THIRTY-SECOND AN-
NUAL NORTH DAKOTA PEONY
SHOW will be about June 18-19,
in Grand Forks, North Dakota.
Exact dates will be sent you by
Mrs. Frances B. Kannowski, Sec-
retary, Grand Forks, North Dako-
ta, on application.

* * * *

The THIRTY-FIFTH ANNUAL
PEONY SHOW of the Minnesota
Peony and Iris Society will be
combined with the Fiftieth An-
nual Show of the American Peony
Society. Full details elsewhere in
this Bulletin.

* * * *

The THIRTY-FIFTH ANNUAL
SHOW OF THE DULUTH PEONY
AND IRIS SOCIETY will be about
July 7, 1954. The exact date can-
not be set until later. Write Mrs.
W. A. Swanman, 5232 Glendale,
Duluth 4, Minn. in June for exact
date.

* * * *

The NINTH ANNUAL PEONY
SHOW of the Superior Garden
Club will be about that same time.
Write Mrs. E. W. Manning, 2006
Logan Avenue, Superior, Wis. for
definite information in June.

* * * *

The dates of the above shows de-
pend much on the vagaries of the
weather. Anyone who expects to
attend will be wise to verify the
dates before leaving home.

We hope as many as possible
will attend each show. They are all
outstanding exhibitions.

We do not know whether the
Second District will hold their
usual show or not. No information
has been received about it.

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Symposium Comments

In George W. Peyton's article that appeared in the March 1953 Bulletin, he called the attention of the members, that according to the by-laws, a symposium of peony varieties is long overdue. Let us not look into the rear view mirror of the past to ascertain why rules were breached, better to face the issue right now, and stop detouring down the alleys to duck it. Mr. Peyton, also, went into some length submitting interesting data that will help immeasurably, should we undertake to embark on a symposium. District Five is now in the process of formulating its own symposium. Before we started on this adventure, a spot check was made of some members to ascertain just how many wanted to have some standard of measurement of peony varieties available to them in the District. The results of this check indicated that a decided majority wanted a symposium. Small random samples, oft times, can distort the picture, because the check may have been made where, by chance, the destiny of those in favor of it prevailed, or because the sample was too small to be accurate. Our experience, thus far, indicates that we went forward on the right foot. However, in order to dispense with any possible future rumblings, the matter of deciding whether or not the Society should formulate a symposium should be put up to a vote to all members. A count of the noses of the pros and cons could be made without incurring any great expense, since a ballot could be printed on one of the pages of the Bull, and the members could tear it out, fill in their expression of yeas and noes and send them into the secretary for tabulating the result.

If the majority express that they want a symposium, then that is the green light to proceed, and no heed should be paid to the pessimistic minority, no matter how valid their wails may appear to sound.

If it is decided to venture on a symposium, as a result of an expression of the majority, then the plan of procedure must, of course be formulated. It would be better to have this done by an appointed few to avoid confusion. The rating, by all means, should be done by all of the members, since this is the democratic way of doing things. There are some that may assume that the general membership is not sufficiently informed and, thus, not qualified to be trusted with the important job of rating peony varieties. This is plain unadulterated bunk and hokum. Past symposiums were formulated by a few supposedly selected experts. They missed the bulls eye by a proverbial country mile in a great many instances. To have all of the members engaged in a concentrated effort to do the rating would give them a sense of importance in being delegated to express their views and have them accepted for their full face value. This is something very important. (Note: In two former symposiums, 1925 and 1933, a committee of fifty did the voting. In the other four, including the last in 1939, the entire membership participated, though less than a hundred actually sent in voting lists. —*Editor.*)

There is doubt in the minds of many about the accuracy of a symposium. No matter how simple or complex a plan may be, or how feasible it may appear, it cannot do justice to every variety when grown

over a wide geographic area. But the final ratings will very definitely reflect the overall esteem, or regard that the members hold for various varieties. This alone is worthwhile. For instance, if a specific variety is given a high averaged rating when a large number express their opinions from many wide areas, then it is obviously a high class variety when grown almost anywhere, and it rightfully deserves to be included among the exclusive elite. Conversely, if a variety is a temperamental brat that yanks down prizes galore when grown only in a small confined area, as some do, then it is in for an assassination for it is bound to reap the wrath of disappointed growers. This is as it should be. It will deblimp some of the misleading inflated scores that some now enjoy.

No one will disagree, that the lumped average conceals much about the variety's traits. This was well recognized when District Five's courageous band started to blaze the trail for their own symposium. So they set the sights on a high trajectory in order to be able to bring down something real good. The present aims are to furnish the District members, if the green federal wallpaper holds out, with integrated data in "Box Score" form. That is, a grand average will be struck of each of the twelve elements or components, that entered into the rating. Won't that be something! A cursory observation of this "Box Score" data on any given variety will instantly reveal the salient virtues and objectionable faults. Such data would be a condensed encyclopedia of peony information, and no matter how much any member may be opposed to a symposium he, or she, cannot dispute the value of this Box Score

data. It's just what the doctor ordered for the fellow that is a peony filbert, shell and all.

There is a potential source of revenue for the Society in publishing concise tabulated Box Score peony data. Who wouldn't be tempted to raid their offspring's piggy bank in order to secure, say two bits or, perhaps, a half a buck to acquire some meaty dope like this? And, it should be a cinch to net our Society about three or four hundred buckeroos, a mighty swell down payment for publishing the new Peony Manual, that everyone wants and cannot get.

Since the release of the rating instructions and rating forms to district Five members, there has been a spontaneous and enthusiastic reaction. The District secretary has been the target for the many praises and a few barbs. Excerpts from a few of the letters that were received are as follows:

"Hooray."

"Our money's worth."

"At last, wonderful!"

"What in the — good will it be?"

"How I'll enjoy swinging the axe at some of the highly rated ones."

"Now I feel that I belong to something."

"We lead, others follow."

"Hope you fellows stew in the mess you will create."

Incidentally, only three members, so far, have expressed an apathetic attitude to the symposium.

Many members wonder why our Society drags the anchor in membership and has a difficult time to manage to stay afloat, particularly when we have an excellent bill of goods to sell. The answer is simple and plain. Many feel that they are not getting their money's worth, or that the lure is not sufficiently attractive. So let's give them their money's worth by cooking up a few

savory dishes that they will enjoy. If they are good and palatable, they will enjoy them and gladly pay the freight. The word of the bargain will be passed along, and the best advertisement is still the satisfied customer. There is every indication that a symposium would offer the membership a delectable dessert which will be enjoyed by the ma-

jority and may help to fatten up the old Bull, since folks when stimulated by enthusiasm, or irked by circumstances, are very prone to express what they have on their minds in writing. This could be the cure for the present stage of soporiferousness.

Francis P. Tikalsky
LaGrange Park, Ill.

More About Sawdust . . .

Some of you may remember the trouble I had about ten years ago using sawdust for mulch. The patch has not yet fully recovered. At that time I used ground limestone as a sweetner to counteract the acidity of the sawdust.

I received a lot of ideas as to what had happened, the best coming from the State Agricultural College at Lansing, Michigan, who told me that the trouble was the microbes that released the nitrogen in the soil had moved up into the sawdust leaving the peony plants nitrogen starved.

Last fall I was back in shape to make another test and picked out eighty plants—five each of:

1. Mrs. A. M. Brand, Ball O Cotton, Reverend Tragitt, Marie Jacquin, Genevieve, Mons. Dupont, Couronne d'Or, Nina Secor.

2. Mrs. Frank Beach, Richardson's Grandiflora, Argentine, Mrs. Edward Harding, La Lorraine, Alsace-Lorraine, Boule de Nieve, Susan B. White.

They were all in one block. In the first place I put on eighty pounds of ammonium nitrate over the whole batch. Then the first list above, forty plants, were covered with sawdust about four inches deep, leaving the other forty bare. The results were almost the same as they were the first time. Nina Secor was stunted to about 14 in. in height. Couronne d'Or barely

broke the ground, Mons. Dupont grew about a foot high but the foliage was red and there were no flowers. Genevieve and Mrs. A. M. Brand were not hurt. Marie Jacquin, Reverend Tragitt and Ball o'Cotton made about a 50 per cent growth but had no blossoms.

There may have been some difference had the sawdust been pine or some other soft woods. The sawdust I had to use was mostly oak with some cottonwood and soft maple mixed in.

Did not notice much difference in the growth of the plants treated with ammonium nitrate and not covered with sawdust. They were healthy but no better than the plants in the adjoining blocks.

In fighting the original sawdust blight I have been using 3-12-12 at the rate of about one-half pound per plant for the past two years and it is having a good effect.

This peony patch was planted in an old worn out corn field and while there was enough fertility desired by peony plants to run them for five or six years, it was playing out.

I am still of the opinion that there is some trace element that a peony plant wants besides nitrogen, phosphorus and potash but I have been unable to find it.

Yours truly,

Ralph B. Smith

Keokuk, Iowa



EXPERIMENTS ON TREE PEONY SEED GERMINATION

By Dr. Barton of the Boyce Thompson Institute

Resume by Silvia Saunders

I recently came across an article published in 1933 (Reprint No. 200) describing studies in Tree Peony Seed Germination, made by Dr. Lela V. Barton of the Boyce Thompson Institute for Plant Research, Yonkers, New York.

Thinking that in the intervening 20 years further studies might have been made, which had shed more light on this perplexing topic, I wrote Dr. Barton asking if such were the case. She replied in part as follows:

"All the important findings about tree peony seed germination are to be found in the 1933 Reprint. Subsequent tests have failed to better this record. Herbaceous peony seeds respond to the same treatment."

The "record" mentioned is that roots were germinated on 53 per cent of the seeds planted. This may not seem to some a very high percentage, but since shoots developed, and the seedlings grew well, on practically every one of the seeds rooted, and since at about 18 months from seed-planting the seedlings were 15-18 inches tall and apparently in splendid condition, this may be a method that peony growers will be interested in.

Some readers may wish to see the further details described in the reprint, and as I have never seen it summarized in the bulletins I have made a resume of it. The whole process consists of having the seeds in a moist medium, first for two to four months in a "warm" temperature, then for two and a half to three months in a "cold" temperature, and finally in a "warm" temperature again, where

they may remain until the following winter. Details follow:

1. Warm treatment. This warmth is necessary to start the roots growing. Fall planting outdoors is not recommended since most of the seeds rot during the winter. It is better to store the seeds dry for spring or early summer planting.

a. Seeds may be sown in flats or pots and kept indoors. A mixture of equal parts peatmoss, sand and soil is a good germination medium, but any good moist soil will do. Instead of regular planting, the seeds may be mixed with moist granulated peatmoss.

b. Seeds may be sown outdoors if they can be kept moist and warm for the necessary maximum four months' time.

c. Temperature for this treatment should be about 68 degrees F. It may vary from 60 to 75 degrees but should not remain long at either extreme and should average about 68.

Root production may begin from about two to four months. (Nothing is gained by leaving the seeds in the warmth longer than this; only an occasional shoot will develop, and the roots will finally die.)

As the rootlets grow to be 1-3 cm. long, the seedlings may be removed one by one, if they have been in peat only. They may now be planted in a mixture, of equal parts peatmoss, sand and soil. Or if the seeds are in soil, or in the three-part mixture, they may wait till root production is "complete" and then the entire flat may be transferred. Four months is the

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maximum time for this treatment in any case.

2. "Cold" treatment. After four months in the warmth, transfer the seeds to a "cold" treatment which will "prepare" the shoots for future growth. (A few shoots may appear before the cold treatment is completed.)

a. If indoors, the seeds may be kept in a cold storage room or cellar, or in an ordinary household refrigerator if its temperature is right.

b. The seeds may be outdoors provided the soil is not allowed to freeze, nor to remain too long above 50 degrees.

c. Temperature for this treatment should be between 40 and 50 degrees. It may fluctuate between 38 and 60, but should average about 47.

d. The seeds should be left here for about two and a half to three months. Shoots may appear during this period; if left too long in a dark place they will suffer from lack of light. Nothing is gained by leaving them longer; even if the room is light. Now transfer to

3. "Warm" treatment.

a. Indoors: flats may now be placed in a cool greenhouse or in some daylight room whose temperature can be held fairly well to the required limits. The Institute used a cool greenhouse, spacing their experiments so that this period came in the spring.

b. Outdoors: Spring temperatures outdoors are ideal for this stage after the "cold" treatment of winter.

c. Temperature for this treatment should be about 65 degrees. It may vary between 59 and 75 degrees but should not remain long at either extreme.

The young shoots should make

their appearance in ~~from one~~ to three weeks. Shoot germination should be almost 100 per cent of those whose roots are already started.

Of course it is essential that planted seeds be kept always moist, never allowed to dry out, nor to freeze.

A photograph showed the young tree peony seedlings after a "summer in the greenhouse, followed by a winter in a board-covered frame." The seedlings are 15-18 inches high, and in splendid condition of growth. Those that had had their "cold" treatment at 40-50 degrees looked best. The seedlings were 18 months old, from date of planting the seeds.

"Controls." "Control" lots of seeds were sown in flats and placed outdoors in coldframes, some in December 1931, others in February, March, May and July of 1932. Those in the frames covered with boards gave better results than those in frames that were mulched or left open.

The May and July sowings gave better germination than the cold-month sowings. The best germination was the May sowing in the board-covered frame; this gave 25 per cent shoot germination by the following spring, which was considered as "satisfactory" (for seeds from the same source given all the treatments, did no better.)

Another "control" lot, consisting of flats of seeds kept in a greenhouse for two years, gave no germination at all, because they had no "cold" treatment to prepare the shoots for growth.

Quality of seeds. As peony growers have found, some seeds are of better quality than others. The institute worked with some seeds that gave only 4 per cent germination regardless of treatment. But

the fact that at best only 53 per cent of the seeds gave root germination, may lead to discovery of some pre-treatment that will give better results.

The Institute had no better results from freshly-harvested, light-brown seeds than they did from hard, dried seeds. Moreover, they have tried the well-known pre-treatments that consist of cracking or filing the seeds, soaking in hot water or in sulphuric acid to wear down the hard outer seed-coat; no better results were obtain-

ed than without any such pre-treatment.

Soils. Acid soils only were used in the experiments, whereas peonies are reputed to love sweet soils. To change the soil pH, however, would seem to be of no importance in these treatments, since soil chemicals could not take effect till after roots had germinated, and we know that growth after root-germination is almost 100 per cent. It seems that what is needed now is greater inducement to the development of roots.

THE NICHOLS METHOD OF MULCH CULTURE

An interesting letter has recently come from one of our newer members, Mr. L. E. Nichols of Chillicothe, Missouri. Here is what he says about the Bulletin: "I first sent in my good cash to learn peonies; You are taken on two counts: the tenor of the Bulletin is that the gentle reader *knows* peonies.. Also you assume there is no new thing in culture. I am red hot on new ideas and experiments in a lone wolf way."

Possibly he is correct in his estimate of the Bulletin. I know I agree with him in the main. But the Bulletin is what the gentle readers make it by their contributions. We have repeatedly asked for articles on just the subjects that Mr. Nichols says we lack, but the response has not been enthusiastic.

To begin to do his part toward correcting this situation, Mr. Nichols has sent me a copy of a book he has written about his method of culture. We shall endeavor to give here, the main facts contained in it.

The title of the book is "THE NICHOLS METHOD OF MULCH CULTURE." Its dedication is as follows: "This book is respectfully dedicated to Noah. He worked forty years

to build his Ark in a wicked and corrupt world. It was his call and he did it."

Similarly our writer has a call and he is occupied in fulfilling it. Here is how it came about. He divides his life work into two parts. The first was devoted to doing his part in raising his family which consists of his wife and seven children and himself. The second part, which has just begun, will be devoted to carrying out his plan of contributing to the good of mankind by developing his method of culture.

His call to this came as follows: "I taught a Sunday School class for sixth graders and the theme of one of the lessons was proper care of God's world and continually making it a better place to live in. A comment on the lesson told how much top soil is carried to the Gulf of Mexico each year by the Mississippi. The more I pondered over the dire results of erosion, the more I became resolved to do something about it. Soon I became so much in earnest about it that I felt it was God's voice, as it were, my call."

As his call came in the first half



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of his life's work he planned to devote ten years to studying and bringing his plan to perfection on paper. Then there was to be another ten year period of testing it in actual practice and then two years in which to write his book on its operation. He says: "Of course I took for granted that the results would be very satisfactory."

Here in brief was the plan as outlined in theory:

Rows varying in width from three to five feet wide would be laid off twenty one feet from center to center. As each row was only 3 to 5 feet wide there was left a center bed of from 16 to 18 feet wide. This was to be planted to permanent crops suitable for mowing and using the mowings for making the mulch over the rows. One mowing was to be in June and the other in late fall. Three years were to be allotted to bringing this mulch in the rows up to sufficient depth to plant. This he first pictured in his mind's eye as all plans must be. There were four main reasons for his method of mulch culture: Stop erosion; enrich soil; stop floods; pay in crops. Also this method would largely relieve the ill effects of extreme wet or dry weather and there would be marked improvement in soil conditions.

Erosion would be stopped by absorption of practically all the rain by the mulch itself and by the soil beneath, which would be made porous by the working of the earthworms. The small amount of run off water would be clear—no erosion.

The soil would be enriched by the addition, twice each year, of the entire mowings of the wide center beds.

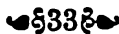
Floods would be stopped by the almost total absorption of the rains by the mulch and the porous soil

and the run-off would be slow.

It'd pay in crops because of greatly increased yield from the enriched soil and the uniform supply of water at all times, whether the weather was wet or dry.

He had glorious visions of crops of many kinds growing in the greatest luxuriance. Those that he considered especially adapted to his method were: fruit trees, grapes, blackberries, raspberries, strawberries, asparagus, melons, potatoes, corn, iris, peonies, small grain. The mulch would be varied to suit each crop. Here ends the theory part and the actual practical application begins. The date about July 1, 1947.

This date marks the beginning of his real troubles. These are invariably encountered when any theory is put into practice. Here is what he says of his operation the first year: "According to plan, and with flying colors, sure of purpose and success, and overloaded with egotism, I began the battle when 50 years old. Already I had prayed and prepared for ten years and felt so self-sufficient that it was really unnecessary to call in Divine aid. Had it been someone else, I could have seen the signal blink yellow and red. Totally unaware I ran the red light and rammed into all but ruin of both project and person. Things never went right and seemed to get "no better" fast. Soon I was as "low as a toad" and still going strong until I landed and parked or camped at Psalm 22:1-6, especially 6a. (But I am a worm and no man.) Melancholy, doubt and despair were with me and I wanted a discharge. However, I was steadfast on one point. I did not dare to appear in Judgment without my best effort on call. My "status quo" remained worm level for a year before God spoke peace to my soul. For the hour and day came as well



as the moment when I received a short answer to a long prayer. "Your prayer is heard and your petition granted." Give God a worm and he can thrash a mountain. In this instance and from now on, this worm will be God's worm. I might add that I feel more like a butterfly flitting about as God moves in on His mountain."

Long continued rains made a quaking bog of the plot. The mowing of the beds was delayed and when it was finally done the material proved far from adequate for making the desired thickness of mulch. So hay and other mulching material had to be bought or received as a gift. Money was scarce. Seeds planted never came up. Plants set out died.

As was to be expected, modifications in the original plan had to be made. To get good drainage, trenches were dug where needed at the edges of the rows. These were a foot or more wide and as deep as seemed necessary up to 18 inches in some cases. The soil was placed on top of the mulch making the beds waist high.

Since that first year, there has been vast improvement in results. Now it looks as if efforts would be crowned with success.

Iris, peonies, daisies, asters, chrysanthemums, and other perennials have been noted successes in the strip bed mulch. Gladiolus have given spectacular results, Hemerocallis (7 acres) have succeeded beyond expectations.

Mr. Nichols hopes to have cut flowers in such abundance that every church, every sick and shut-in will have, free of cost, flowers every week when in season. He hopes also to sell enough to pay the cost.

He has also tried out to some extent what he calls a sheet mulch,

Two acres of land were covered with corn cobs to a depth of about six inches. Holes were dug in the cobs and nut trees set out. Most of them died. Melons did not do well. The ground was too cold and wet and too little air. So he has laid off trenches 12 ft. apart covering cobs with the soil from the trenches and thus providing good drainage and he hopes for much better results in this field.

As we are primarily interested in peonies, here is how he grows them. Two methods are employed. For growing them for nursery purposes, a trench is made about a foot or more wide and fifteen inches deep. The dirt is placed on the mulch bed. The trenches are about seven feet apart. For cut flowers and displays he plants them in mounds. First a trench is dug a foot or more in depth and any width from one and a half feet up to as wide as a side walk, though most of them are from two to three feet wide. The dirt from these trenches is placed in mounds five feet apart made on top of the mulch. The top soil from the trench goes at the bottom of the mound and the sterile soil on top. This keeps down weed growth. The mounds are about waist high as you stand in the trench. The rows of mounds are from seven to ten feet apart. A thatch covering is maintained of grass and weeds. This thatch shields the plants from hot sun and wind and keeps the mounds from drying out. Its rotting also furnishes humus for the soil.

Here is how Mr. Nichols treats his roots on receiving them:

"I treat peonies like they are Royalty, very precious, as alive as a healthy new born baby. I remove them from the moist packing, one at a time, divide them carefully, using a thin, sharp knife and being

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very careful not to harm the buds. I get as many as 2 or three or even 6 or seven small cuttings that have nice buds and roots, from a standard division.

Now I write in my book, the name, number, color and kind of peony and the exact place I plant them.

Next I drop them in a bucket of water, one kind to a bucket, and plant them in the prepared mounds. (See above.)

Lush green grass grows in the

middles between the mounds and the blooms are held aloft in a glorious way for display."

We hope we shall have further reports from Mr. Nichols on the success of his method, at the end of this season. The results at the end of the second year were encouraging to say the least.

Certainly those who have a water problem on their hands might use the method to great advantage, as well as others.

HYBRIDIZING Its Appeal and Importance

L. W. Cousins, London, Ontario

It is generally understood that the majority of our Garden varieties of the peony are descended from one species, the *albiflora*, which has recently been re-named the *lactiflora*, and are selections from generations of seedlings. It is remarkable that one species could be so greatly improved by this method, without the admixture of another species. I presume that it may be taken for granted, that enthusiasts would like to see more new improved varieties but it seems to be the consensus of opinion that this is a long and arduous task which may indicate that the resources of the *lactiflora* species are about exhausted.

Many of our varieties have come down to us from the Victorian era and are the product of those times when doubleness was one of the main objectives of the seedling raiser. Today, we hear many objections to doubleness and I suppose that it is really a freak of nature and of no great virtue in itself. The large double cabbage type of flower is also inclined to drag in the dirt unless they are supported on excep-

tional stems. The *lactiflora* species did not provide seedlings with a wide range of color nor were the colors very enduring in the garden; the pinks faded to white and the reds to a magenta pink. The exhibition flowers, that were bagged and protected from the weather, revealed a lovely quality in such contrast to those not so protected that it was quite evident that the peony was not a garden flower.

Twenty-five years ago, I grew and exhibited at our local shows many of the highest rated varieties then available, but because the peony excelled only as a cut flower and the blossoms were only a repetition of those of previous years, I discarded the lot and became an Iris fan for the Iris seemed more at home in the garden and was more amenable to the hybridist persuasion. The Iris Society now has possibly a couple of thousand members, some of which were no doubt good prospects for membership in the American Peony Society. It would be of interest to know if their objections to growing peonies and

joining the Society were the same as mine.

Ten years ago, and with my usual good fortune, I purchased my first hybrid peony roots from Prof. A. P. Saunders. They have been added to from time-to-time and there is now a nice collection of them in the garden. The Saunders' Hybrids were a revelation of beauty. They have satisfied every requirement we demand for both a garden and a show flower. I will not rhapsodize further. If I lavish more praise on them, the more I feel that the praise will be discounted.

Prof. A. P. Saunders spent the last thirty years of his life working with the peony. He approached his task with a scientific and comprehensive attitude never attempted by any hybridist. A most complete collection of species and variants was assembled and used in crossing between the species and with garden varieties of the *lactiflora*. Some of his seedlings were quadruple hybrids. I have no exact figures but between one and two dozen species and variants were used.

As mentioned before, the great majority of our named varieties grown in gardens, are descended from only one species and have only those attributes or qualities that can be obtained from that species, the *lactiflora*. It needs little imagination to understand that the many fertile hybrids of Prof. Saunders must contain a wealth of attributes that are now available to the hybridist. The importance of these new, inheritable qualities cannot easily be overestimated.

Let me mention some of these qualities that are so important and what they should provide.

1st. *A greatly extended season of bloom.*

My earliest hybrid blooms here

in Ontario about the 24th of May, which is three to four weeks before the *lactiflora* varieties.

2nd. *Hardiness.*

In the garden, I have seen a bed of one hundred hybrid seedlings with flower buds bent over and touching the ground from the effects of a late, severe frost; by noon these plants were erect and at no time was any damage observed to plant or flower.

3rd. *Gorgeous new and unfading colors.*

The hybrids bring to the peony many new colors that range from self-yellows to apricots, warm pinks, scarlets and even lilac. Many of these hybrids hold their colors very well indeed and those that fade are often improved in color.

4th. *Easy propagation.*

Not all, but many hybrids can be increased even faster than the *lactifloras*.

5th. *Long-lasting as cut flowers.*

Tests were made with a local florist and showed that the hybrid blooms lasted longer than the other flowers in the container and also received much favorable comment. I have also noted that some of the seedlings refuse to drop their petals until the blooms have turned brown.

6th. *Vigor.*

This quality seems common to most hybrids and many are exceptionally vigorous. The species Mlokosevitschi seldom lasts more than three or four years in my garden, but the Mlokosevitschi hybrids appear to be as vigorous and as long-lived as other plants.

7th. *Hybrids are good garden plants.*

The light airy blooms are supported on good stalks that stand up in bad weather and the colors show remarkable resistance to fading.

8th. *Good seedlings of real merit not hard to obtain.*

It has been my experience that at least 5 per cent to 10 per cent of the seedlings are worth keeping and possibly naming. The proportion can vary according to the parentage of the seedlings. In some cases I have done much better than this.

There is no longer any necessity to raise thousands of seedlings to select a few improvements. The quality of the average seedling is surprisingly high. It is easy to visualize a future when many happy and enthusiastic hybridists will have the time of their lives raising grand things.

With the passing of Prof. Saunders there are a few projects that should be undertaken by the A.P.S.

Since hybridizing and the production of new varieties are vital to the future of the peony and the prosperity of the Society; and as the hybrids are the only real source of improvement; the A.P.S. should use every means to bring home to the membership a clear understand-

ing of the importance of the work of Prof. Saunders and the great influence it will undoubtedly have on the future development of the peony. Every effort should be made to encourage hybridizing and use of the Saunders' hybrids in this work.

At the exhibitions that come under the auspices of the Society and in the classes that call for tabling many varieties, it should be required that a percentage of these varieties must be of hybrid origin; this percentage to be gradually increased from year to year. Lastly, the American Peony Society should create a Saunders' Memorial Award for hybridizing. It will certainly become the most sought after and most valued award of the Society and will help keep green the memory of the man to whom we owe so much.

NOTE: See Bulletin No. 129, June, 1953, for an account of the work to date with herbaceous hybrids. EDITOR.

A WHEEL CHAIR REPLY

I received a long letter from our Wheel Chair Habitant, in which he comments on the article concerning him, that appeared in the December, 1953, Bulletin. In addition he dwells a little on his misfortune and relates a few of his experiences with peonies.

The day I received the letter, was one of those on which Nature seemed to frown and, as a result the gloomy atmosphere permeated right through me. After reading the letter, sunshine seemed to radiate and I at once seemed to receive a spiritual and moral uplift. It made me count my many blessings and it scaled down those minor adversities which are often magnified from a repressed viewpoint.

This letter is printed here practically in toto, only a few lines that were too personal or too irrelevant were deleted. He asked that his name be kept anonymous and by all means we should respect his wishes. So, dear members, read his letter with a handkerchief available, lest a wisp or two of tears, perchance, may extrude themselves inadvertently.

You, too, count your many blessings and be inspired to battle your way to lofty planes, no matter how discouraging the odds may appear to be.

Thanks, our Wheel Chair Habitant, for your most inspiring words. May God keep you well. Carry on!

—Francis P. Tikalsky

Dear Mr. Tikalsky:

Last Thursday when the December issue of the American Peony Society bulletin was received, I did the same as I always do with a new copy, glance over the "Table of Contents" first of all, and when I came to "Tribute to a Wheel Chair Habitant," I turned to that page expecting to read about another poor unfortunate person confined to the use of a wheel chair, and I was surprised to learn that the article was about me.

I do not feel that I rate any tribute..

The late Dr. John L. Crenshaw should be the one deserving of A Tribute—there was a Man—to carry on when he was crippled with arthritis and every bit of work amongst his collection of peonies must have been torture to him, and yet he carried on.

I do not feel as if I have done so much, but perhaps you, as well as the other American Peony Society Members may wish to know more about my case. As you write articles quite often for the American Peony Society Bulletin, you may select parts of this letter, parts you may think interesting for others to read, arranging and wording it to be easier read.

It may take as high as 15 to 20 years to get a new origination worked up to the point where sufficient stock will allow it to be put in commerce, and the originator is entitled to all he can get for his years of hard work.

I like to get my peonies the hard way, and I never would ask for, or beg a division from the grower.

As to my self, my case has been definitely diagnosed as Multiple Sclerosis, a central nerve disorder which does not affect any two patients alike.

There is no known cure for this

type of nerve disorder, but there is a clinic in New York, one in Washington, D. C., and a hospital in Tacoma, Washington, which give treatments that may help some, while not helping others.

Of all the misery that I have gone through, trying this, trying that, "maybe" it will help??????

Guess I may be called a human guinea pig. Jones always paid the freight, even though he received no results. Every one advised me to go up to Mayo Clinic in Rochester, Minnesota—they perform miracles up there.

If a patient can be cured, they can cure them, but they do the same thing at the Cleveland Clinic in Cleveland, Ohio. At the Mayo Clinic, they told me that different treatments would be tried, but they did not guarantee results.

My collection of named peonies did number about 95 of the herbaceous type, and last fall, 17 more were added, one each of Pico, Lights Out, Helen Hughes, Alice Harding, Mildred May, Martha Bulloch, Florence Nicholls, Victory, Golden Dawn, Mrs. Harry F. Little, Sky Pilot, June Giant, Prarie State, Auten's Pride, Nippon Gold, Moonstone, and Lotus Queen.

Last June, my sister took a vase of Nick Shaylor and a vase of Tomato Boku to a Garden club meeting and they created quite a sensation, as there were some members present who had never seen a Japanese type peony bloom, and asked what they were. The Nick Shaylors were at their best, just about perfect. I like to study the formation and color of the bloom. Viewed at different angles, the flower seems to change, it may look as if it were carved from marble, and when viewed from another angle, it shows up those delicate shades of pink, while another bloom may ap-

pear to be three flowers in one. I believe they are called rosette formations.

They asked if all Nick Shaylor blooms were from the same plant. They must have been because there is only one plant of Nick Shaylor in my collection.

My collection is made up of some of the good ones, some of the better, and some of the best.

In 1943 I made inquiries where I could obtain stock of the species peony *Mlokosewitschi* and found that I could obtain a root of it from A. P. Saunders.

I wrote to A. P. Saunders at that time, and his reply was . . . that it was rather uncertain for some . . . may refuse to grow . . . if it grew it would not bloom . . . and he said he had none of these troubles, but for him, it rotted badly in the crown, and he could never find out why it did that, and he ended up by saying that he thought it was worth trying. So I ordered a plant, which was received October 13th, 1943.

The plant received, was not a division, but it looked more like a two to three-year plant growth from a 1-eye division. It was just as clean and smooth, not a trace of rot anywhere, and it was planted the same day it was received.

It bloomed the very first Spring after planting, and has bloomed each following Spring, to date.

In this section, it blooms the first part of May, and we most always get a rainy spell along about that time and continued rain "washes-it-out," petals drop after a few days of rain.

In the "Secretary's Notes" in last December's Bulletin, he says, "Dr. White made over four thousand crosses, from which only one lived, and it is named "Claire De Lune," a yellow that is easier to

grow, and more certain than *Mlokosewitschi*.

In regards to the Tree Peony, we have a total of 20 in our collection, seven of which were planted November 21st, 1953, but most are small sized plants, some probably will not bloom until Spring of 1955.

Several established plants received "bare-root," just sulked and failed to produce. A 3-year-old field plant of "Chromatella" was ordered early last summer, and it was shipped Balled and Burlapped, the ball being good sized and probably a little larger than a gallon dish, and I am anxious to learn how that plant will behave. I'll report after this Spring, as to growth, bloom, etc.

One is lots better off by purchasing 2-3-year old plants of tree peonies, because they cost less than half the price of an established plant, and small plants usually bloom the first Spring after planting.

My daffodil collection is quite large also, so there are plenty of flowers in Spring and early summer.

I have nothing to sell, or offer, and have the flowers for my own enjoyment, but my sister cuts hundreds of blooms during the season, for friends who may be in the hospital, or just returned from the hospital, or just sick at home.

This could go on and on, but you no doubt are tired by this time, so I'll have to ring off, and you have my permission to use any part of this letter, if you wish to rewrite, re-arrange for an article in the A. P. S. Peony Bulletin.

However, let my name continue to be anonymous, because I have more than enough correspondence than I can take care of right now. My right hand has no strength at all, not even enough to grip a lead

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pencil to write. Had to learn to write left handed when writing with a lead pencil.

I can write with a fountain pen in my right hand, but it isn't easy, some days are better than others, and some days the power is low, and the pen keeps slipping from my grasp.

Of course last fall planting of peonies may bloom and then again

they may not, but most have bloomed the first Spring after planting, but they need to establish before one can expect them to produce true to color and size.

I will now bring this to a close, with all best wishes for a successful peony season.

From,
The Wheel Chair Habitant

1600 or 1800 . . . WHICH?

Francis P. Tikalsky

La Grange Park, Illinois

It is well established that improved varieties of *lactiflora* peonies were imported into England early in the nineteenth century, (1805-1810,) from China. One of my hobbies is Art and I have been looking for some graphic representation to support this.

My good wife and I went to see the sensational Whistler-Sargent-Cossatt exhibition at the Chicago Art Institute in February. When we had absorbed the highlights of this exhibition, we went to the other galleries to review the old and see the newer acquisitions.

I saw a still life, done by the Dutch master, Adriaen Van Der Spelt. This fellow lived from 1630 to 1673. This authenticated work had shown in it a bloom of a Chinese peony. This, in my mind, establishes evidence that Chinese peonies were somewhere in Europe before they were imported by England early in the nineteenth century.

Perhaps some of our members may have sources of information, which might antedate or dispute Van Der Spelt's evidence. If they have, they should, by all means, present it for our information.

PEONY BREEDING

Some Questions Answered

Edward Auten, Jr.

Princeville, Illinois

A member of the Society wrote and asked me the following questions, saying he could not find the answers in the bulletins. Thinking they might possibly be of interest to some other persons, I am giving here my reply.

1. In breeding for color, what are the tendencies? Is red a dominant color? Is pink the result of a red x white cross? I would judge that white is a recessive and will breed true. Does it?

Ans. Peonies are already so badly mixed up, genetically, that it is almost impossible to follow any definite lines, such as Mendel's law. Not only do we have wide variations in all properties in the pure *lactiflora* (*albiflora*) species, but I believe the Japs injected some other species blood into their introductions. What it was, I do not know. But most of the Jap kinds, sent from Japan, will, if planted blind, without any eyes or crown material, in time, throw out new shoots from the side of a plain root. This factor can easily be transmitted to new kinds. El Capitan, a semi-double of mine, will send out these side shoots. It probably is a seedling of Mikado.

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As to tendencies in color, the general one is for like to produce like; for a red, crossed on a white to split the difference and produce some pinks. In the *officinalis x lactiflora* cross, where red *officinalis* is used, the red is strongly dominant. But these are not unvarying rules. My blush white double, Northland, not a hybrid, is supposedly a seedling of the black-red Adolphe Rousseau, pollen parent unknown. Whether that came from a recessive tendency or from the push of the unknown pollen parent, we cannot tell.

White crossed on white will probably give all whites, but not always and I do not know that such a white color should be called recessive. My most outstanding results of crossing white on white were, first, 98 seedlings of white Duchesse de Nemours, chance pollenized, but close to several plants each of the old white single, *albiflora*, The Bride, and the white, loose, semi-double, La Rosiere, which has a weak stem, blooms lie on the ground. From these 98 seedlings, I named at least 16 kinds and could have named more, except for similarity. There were about sixty doubles and semi-doubles and three pink doubles, Naomi, Pathfinder and Julia. The last was so full petalled that it would not open well when full grown, so I discarded it, but it was a beautiful thing when perfect.

Some of these white doubles were discarded because of weak stems; a most unusual susceptibility to late frost damage of buds and one, Silver King, plant, stem and bloom of absolutely highest quality, but so very full and late, it does not open every year, this in contrast to most of the kinds being early. An especial refinement undoubtedly came from La Rosiere. Other pol-

len may have landed on the Duchesse de Nemours blooms than from *Albiflora*, The Bride, and La Rosiere.

My other successful use of white on white was as follows. Isani Gidui is a fine enough bloom for anybody, but stem and plant habit are not very good, so I took a lot of pollen from my white originations and raised 420 plants from this seed. Of these 60 white Japs were good enough to advance to second trial. From these, after many years, I named five. I imagine I threw away some singles that would equal any single on the market today.

2. How do you get doubles? Japs? Singles?

Ans. You get doubles when the Lord gives them to you. Nature is not concerned with perpetuating fancy kinds, but the species, so there is a strong tendency for reversion to the single type. You will get all the singles you need in your striving for Japs and doubles.

To get Japs, pollenize Japs with single pollen. When I finally got Nippon Brilliant, it was a second attempt. First plants where I expected Japs, yielded only 3% of Japs and no good ones. I had used pollen from semi-doubles, evidently, for I started all over again and used pollen from singles on Japs and got 25% Japs, including Nippon Brilliant. Moon of Nippon came from pollen split out of a narrow petal of double white Marie Lemoine, which had a yellow swelling on its edge. But Jap type can pop out any time and you cannot be sure what you will get from any lot of seeds.

3. What about early and late blooming, which is dominant? Also height of plant?

Ans. Time of blooming and height of plant are variable in offspring. I did, however, get Peggy, a dwarf, from Octavie Demay, a dwarf. I

now have a nice, unusual single pink, I could name, from Octavie Demay. It is also dwarf.

If I were seeking new doubles, I would use pollen from semi-doubles on doubles that had seed pods, but no pollen; on semi-doubles and on the best Japs.

If I wanted new whites, I would cross white on white. If new reds were desired, red on red. If pinks were the goal, red on pink, since there is greater need for deep pinks than light ones.

But I say, first of all, work with kinds that are vigorous, have good stems and above all a strong root

system and roots that are resistant to decay. If working with reds, use only those kinds which are a clear red and which do not fade an ugly shade as the bloom ages. In double whites, rose fragrance is a must with me now and also refinement of petalage.

Line breeding is not really important with peonies. If you get a good one, you have it for all time by root division. If one lived to be 300 years old, it might be interesting to breed true hereditary strains and start new. Even so, what one got might not be a bit better than some we now have.

DEPT. OF REGISTRATION

The following varieties, whose names have been approved by the Nomenclature Committee, are presented for registration by the originators or owners as noted:

By **Gilbert H. Wild and Son**, Sarcxie, Missouri, originator and owner.

HARGROVE HUDSON (G. H. Wild and Son, 1949). D., EM., Light pink. This large, even colored light pink is a flower of distinction, with excellent stems of medium height. Form and texture outstanding. It blooms in early midseason.

OPHA (G. H. Wild and Son, 1950). S., E., White. Large, pure white, single. Stems medium tall. Strong. Named for Mrs. O. R. Gouverneur of White Cloud Farm, Carthage, Mo. Blooms early.

By **Gilbert H. Wild and Son**, owner and **Dr. H. C. Cooper**, St. Louis, Mo., originator.

SISTER MARGARET (Cooper-G. H. Wild and Son, 1953). D., EM., White. Large pure white, full double. Stems medium height and

strong. Good substance. Lasts well as a cut flower. It was shown at Topeka, Kansas, in 1942 under Seedling No. 23 and attracted much favorable attention.

By **Gilbert H. Wild and Son** owner and **Col. J. C. Nicholls**, Ithaca, New York, originator.

BERYL CROCKETT (Nicholls-G. H. Wild and Son, 1954). D., M., White. Nicholls seedling No. 442. Large globular white with good stems of medium height. It opens in midseason. It has much the form of Mons. Jules Elie. It does not usually show its carpels when fully open. It is named for Beryl Crockett of Fort Smith, Arkansas, who chose it from several hundred seedlings.

BETTY CALVERT (Nicholls-G. H. Wild and Son, 1950). D., LM., Blush. Nicholls seedling No. 391. Beautifully colored blush, fading lighter, rather flat flower, full double, with good stems. The petals are wide and of good substance. It was named for Betty Calvert of Fort Smith, Arkansas, having been chosen by her.

BETTY MINOR (Nicholls-G. H. Wild and Son, 1954). D., L., Light pink. Nicholls seedling No. 1372.

Large, beautifully formed, light pink fading to almost white. Stems good. Medium height. It opens late. Sometimes shows a few red markings. Named for Betty Minor, daughter of Dr. and Mrs. Joe Minor, formerly of Nashville, Tenn., but now of Atlanta, Ga.

CYGNET (Nicholls-G. H. Wild and Son, 1951). S., E., White. Nicholls seedling No. 35½. Large, pure white single. Early blooming. Above medium height. Excellent stems. Coral stigmas. A fine plant for the garden.

JESSIE GIST (Nicholls-G. H. Wild and Son, 1953). D., EM., Medium pink. Nicholls seedling No. 424. Parents: Marie Crousse x Spring Beauty. Beautiful shade of medium pink, lightly marked red. Form good. Full double. Stems good medium height. Selected by Mrs. Byron Gist of Amarillo, Tex., to bear her name. She considered it the best of all the hundreds of seedlings at Sarcoxie.

LUCY INEZ (Nicholls-G. H. Wild and Son, 1954). D., EM., Light pink. Nicholls seedling No. 1305. Large, globular, medium light pink of good form. A few stamens are intermingled. It has good stems of medium height. It blooms in early midseason. It was named for Mrs. Lucy Inez Schneider of Fullerton, Calif., having been chosen by her daughter, Mrs. Lillian Campbell of Fort Scott, Kans.

PINK FORMAL (Nicholls-G. H. Wild and Son, 1953). D., LM., Light pink. Nicholls seedling No. 877. Soft mauve pink, large, heavy stems, medium height. Good foliage. Blooms in late midseason. It received a First Class Certificate at the Kansas City National Show, June, 1953.

Beryl Crockett, Betty Minor and Lucy Inez have not been offered for sale yet.

CLAIRE DE LUNE AND NANCY

Thinking it may interest many, here is the opinion of Dr. Earle B. White, their originator, of their worth.

Claire de Lune, due to its wide margin of possibility of production from a cross, is naturally a slow grower. At my place, there were few blind stems and all stems produced good flowers.

It has set seeds, but not in abundance. Whether the pollen is viable or not, I do not know. The fact that it sets seeds, however, is hopeful.

As a peony hybrid, it should stand upon its own feet as an unusual and probably valuable contribution to the genus. Whether it is ever valuable in the production of yellow peonies, time will tell.

It is only a pale, creamy yellow, with a large mass of orange yellow stamens. From these stamens may come what all of the workers are seeking. Its greatest value lies in the fact that having no "macrophylla" blood in it, it is not marred by the blue-red carpel tips, which characterize all hybrids with "macrophylla." Its carpel tips are a pale pink.

Mr. Wild has all of the stock of a variety of which I have great hopes. It will be introduced under the name "NANCY." Its seed parent is "officinalis rubra plena" and the pollen parent is one of Prof. Saunders hybrids No. 4710 from "Mlokosewitschi x macrophylla."

It is what I consider to be a distinct color break, as it is a pale peach pink and looks like "home made" peach ice cream. I hope it may prove valuable as a breeder because of its "Mlokosewitschi" blood, but, that also, time will have to tell.

PEONIES IN 1953

By Floyd J. Miller

Pipestone, Minn.

My first peonies were planted in 1945 and I have added new plants every year. This season the bloom was rather disappointing. The summer and fall of 1952 were dry, there was excessive moisture into May this spring, and late hard freezes occurred this year. When growth did come, it was too rapid and there were many weak stems.

The singles and Japs were generally good. A considerable number of my two-year plants had a complete absence of flowers. All of the older plants were influenced by the climatic conditions, regardless of their age. Among the well established plants, these varieties showed no bloom: Prairie Afire, Blanche King, Longfellow, Mary Brand, Old Lace, George W. Peyton, Dr. John L. Crenshaw, and David Harum. *Tenuifolia latifolia*, Martha Bulloch, Mikado, and Rubra Superba gave very few flowers. Poor openers this year were Franklin's Pride, Minuet, Nick Shaylor, Mrs. Livingston Farrand, and Hansina Brand. Walter Faxon, Kelway's Glorious, Le Cygne, and R. A. Napier gave poor quality of blooms. Among the doubles my best performers were Alice Harding and King Midas.

By contrast, those plants which I divided and reset in the fall of 1952, gave a very good account of themselves. Most of them bloomed and one did much better in the new divisions that it had ever done in the original planting. The additional water given these plants last fall probably helped them this year.

MR. AUTEN'S METHOD OF HYBRIDIZING

In an article in Bulletin No. 39, December 1928, Mr. Auten says: "Early in the game I bought some brushes, glass dishes, tweezers and a magnifying glass, and set out to pollinize in most approved style. The first day I had a minute quantity of choice pollen. Half of it disappeared amongst the hairs of the brush, some of it spread out hopelessly on the bottom of the dish, and in trying to transfer pollen from the brush to the stigmas, the hairs jabbed them. Since then I have never bothered with a brush. It might be alright with a liberal supply of pollen, but certainly has its drawbacks otherwise. This fall, when my sixteen year old son and myself were picking some seeds that he had hand pollinized last June, he told me how some visitor, a stranger had given him a long lecture on his poor methods as he worked. But as we picked the seed, some pods crammed full of seed, some empty, some with only two or three, I felt that our methods were justified, for had they all had a normal number of seeds, I would have felt the bees had done most of the work. In this case, he had bagged the blooms carefully, and as he was using pollen obtained by splitting the edges of Japanese petals, each seed looked like a wonderful promise of something good.

Pollen can be transferred from an anther, the thumbnail, or a knife blade to the stigmas with no damage to the latter, and with practically no loss. A stigma can be damaged by a brush, and a delicate touch is necessary no matter what tool is used.

Secretary's Notes

At this issue of the Bulletin marks the beginning of the Fiftieth Anniversary of the incorporation of our Society, we are publishing re-prints of several articles that appeared in early issues which we think are specially appropriate at this time. We expect to publish several more in later issues, which will be selected as of special interest to our members. If anyone wishes a special article to be re-published that appeared in any of these early issues, now out of print, we shall be glad to comply if possible.

It is our present intention to get the June, 1954, Bulletin in the mails by June 15, if at all possible. This issue should appeal to our advertisers as one that will be an excellent one in which to present their wares as it will come out when enthusiasm is at its height.

The accounts of the various shows will appear in the September number which we hope to have out by the first of that month.

We hope we can then keep our issues on time. But often unexpected difficulties arise which prevents this being done.

We call your attention to the list of shows to be held throughout the country. The first of these, the Oklahoma City Show, presents an excellent opportunity for our members in nearby Texas, Kansas, Missouri, and Arkansas to attend and for some, at least, to exhibit.

We hope our Fiftieth Annual Meeting will be the largest ever held from an attendance standpoint. Possibly many will wish to see one of the other shows to be

held just prior to this one. These are the Grand Forks, North Dakota show and that of the Fifth District in the Chicago area. They will certainly be amply repaid, if they do so.

We do not know what the plans of the Second District are for a show this year, but, if they do not hold one of their own, they have an excellent opportunity to show in the June Peony and Rose Show of the Horticultural Society of New York. Here is their chance to show the New Yorkers the beauty of the Peony as compared to that of the Rose. How many will accept the challenge? A like opportunity is being offered the members around Boston in the Annual Show of the Massachusetts Horticultural Society. We hope these opportunities will not be lost.

Since the first of this year, we have enrolled eighteen new members from fourteen different states. Illinois and New York lead with three each. Kansas follows with two. There are one each from Colorado, Connecticut, Georgia, Kentucky, Michigan, New Jersey, Pennsylvania, Vermont, Virginia, Washington and Wisconsin. Of these two were sent in by other members. We hope our membership will use every effort to increase our numbers to a new high during this, our Golden Anniversary year.

BACK DUES

In the near future statements will be sent all members who our records show are in arrears in payment of their dues. We hope all will respond promptly.

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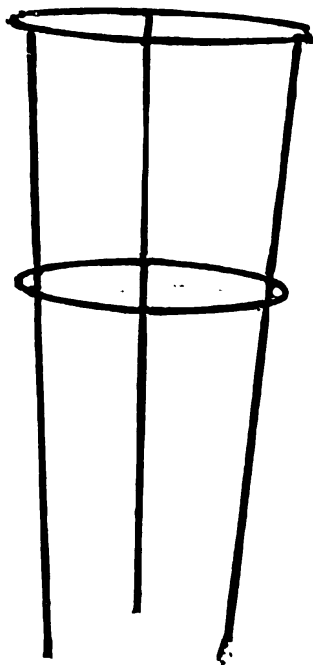
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